

SIX LOW COST WAYS TO IMPROVE YOUR COMPRESSED AIR SYSTEM

By Manhar Grewal



There isn't much that can fully replicate the efficiency of buying a brand-new rotary screw air compressor; but we know making a large capital expenditure is not in the cards for everyone. Especially when the economy is turbulent or money is tight. Fortunately, there are some easy steps you can take with your current air compressor system to ensure it is optimized for efficiency and durability/longevity. In this blog, we will discuss things you can do today to improve or maintain the health of your air compressor system and maximize its efficiency as much as possible.

1. Keep a close eye on your filters

In our current times, think of your compressor filters like a person wearing a face mask. Wearing a mask restricts your air flow when breathing. That's exactly what a dirty filter is like. It requires a person to use extra energy to inhale, just as it requires a compressor to expend extra energy to operate. Air, oil and sump filters are all important to keep a close eye on.

Air filters are vital components in a compressed air system. Not only do air filters help remove contaminants and debris, but they also help the compressor operate more efficiently and minimize the impact of wear and tear. Therefore, you need to routinely inspect and replace filters.

Air filters create pressure (psi) drops. A new filter might be a 1-3 psi drop, while a dirty filter could mean a 6-8 psi drop. Each psi drop will block more air, so you can't load. Ultimately, this means your machine is working harder and consuming more energy than is needed.

Oil filters are similar. When dirty, it will cause the oil system to require more power to filter through a higher psi drop across the dirty filter. Make sure you are maintaining both the oil filter and the separator element, which is sometimes referred to as the sump filter.

2. Get an oil sample on your compressor

This is a commonly overlooked component of good air compressor maintenance. Oil sampling and analysis helps identify problems in the early stages, which helps minimize downtime, reduce repair costs and ensure energy efficiency.

Not only do oil samples help ensure your oil quality is good but it also checks for metal particulates, which indicates there may be larger issues at hand, such as a failing air end. The dirtiness of the oil is also an indicator that other consumables need to be changed – things like the sump filter or oil filter.

Depending on your environment, you may need to change your oil more frequently than is designated by the OEM. For instance, in dirty environments, you may need to change the oil every 6,000 hours versus every 8,000 hours.

3. Keep your OEM maintenance on schedule

OEM maintenance should not be viewed as a burden or excessive maintenance, but parts simply wear down, where they degrade over time or from usage. Sullair strives to stand behind its promise of durability and reliability by replacing the key components in the compressor to allow for longevity and optimal performance of the compressor. We take pride in our compressors lasting 10, 20, even 40+ years. We hope your compressor lasts that long, too, but it means you need to keep up with OEM maintenance to allow proper cooling, filtering, and health of the machine. This is the simplest way a customer can protect their investment in their compressed air system. You should also be careful to never use non-OEM, “will fit” parts. You may think the upfront cost savings is worth it. In actuality, saving a few dollars on off-brand parts hurt the large investment of the compressor in the long run. For example, even though a cheaper filter fits, the media in the filter is never the same as the OEM filter, which can cause more expensive components like the air end to fail. Savings a few dollars now could cost you thousands in the future!

4. Assess your compressor room and system as a whole

A compressor room is more than just a compressor, so look at all the other components. For instance, you should always have a tank. A properly sized tank can optimize the energy consumption from the compressor. Regarding maintenance on a tank, make sure moisture is not being collected in the tank and that there is no water in the tank. If there is water in the tank, you need to either remove the moisture or invest in a higher quality drain.

There are multiple types of drains on the market, but not all are created equal. Some drains that let out moisture also end up letting out compressed air, and compressed air is your money! This is compared to Zero Loss Drains, which only let out moisture and not compressed air. Stay tuned for an upcoming blog on the types of drains and to understand the benefits of Zero Loss Drains over automatic or manual ball drains.

If you have inline filters, make sure they are being properly changed per the time intervals required. Many in line filters have a gauge to show if they are green (good) or red (need replacement). Take some time to inspect the filter element, not just the gauge.

Also look at your dryer. Is it properly drying the compressed air? Is the dryer maintenance from the OEM being followed? Inspect the drains on the dryer.

Leaks are a big concern of any compressed air system. Make sure you are using quality pipe that does not corrode if you have the luxury of replacing or selecting pipe for the compressed air system. Make sure red rubber hoses, which are prone to leaking, are not used and replace and inspect properly.

5. Monitor load cycles

Assess your compressor to determine if it has a lot of load cycles or not, as you do not want it to continuously turn on and off. Make sure there is proper time between each cycle.

If you determine there are a lot of load cycles, try adjusting your pressure set points. Even reducing your compressor by 2 psi cuts energy consumption by 1 percent*! Changing the pressure does not increase or decrease the air flow (cfm), which is a common misconception.

By understanding what psi your downstream equipment truly requires, you can better align the output of your air compressor. Often end customers test the waters by turning down their compressor 1 psi each week and assessing how their downstream equipment reacts. Going into this, do understand if it begins impacting your equipment downstream, you will need to readjust accordingly (by increasing psi).

6. Assess energy savings

Once you adjust your psi to the optimal pressure for your processes, you can then use a tool such as Sullair AirSuite™ to determine how much you're saving in energy costs. AirSuite provides an analysis of your entire compressed air system via easy-to-read reports, helping you make the right decisions for your operations.

If you are looking for new equipment in next year's budget, now is the time to do your homework. A proper air audit and simulation with AirSuite can provide ROIs to you when you replace your equipment with new, efficient equipment. To learn more, call 1-800-SULLAIR or find your nearest distributor at <https://america.sullair.com/en/search/distributor>.

Everyone would love the efficiency of a brand-new air compressor, but we know the reality of challenging economic times. Fortunately, there are many simple and low-cost measures you can take today to ensure your current air compressor system is as optimized as possible to get you through to more promising economic times.

*Source: CAGI <https://www.cagi.org/working-with-compressed-air/benefits/10-steps-to-savings.aspx>