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The first thing you'll notice about your compressed air "tank" (or air receiver) is that unlike your compressor, it doesn't have large power cables running to it. While an air receiver doesn't consume power, odds are, if properly sized and applied, it can be like money in the bank with regard to compressed air system efficiency.

Compressed air receivers are sometimes referred to as "air storage." They act like a bank account, storing compressed air for later use—*similar to saving money for a rainy day or a large future purchase* . Storing away money, little by little, takes a smaller bite out of your normal cash flow and allows you to live more or less normally. And, the bigger the bank account you build, the less it hurts when you have unanticipated or unusual expenditures.

Having significant compressed air storage in place means the compressor is able to put away some compressed air when it can, and that production pressure is less affected should the demands require more compressed air than the production system can produce. The alternative is to run more air compressors to feed peak demands, or to run the existing compressors at higher pressure—*something that costs at least 1% of the compressor power for each 2 psi increase in compressed air pressure.* Here are some types/uses of compressed air storage:

Located close to air compressors, **Control Storage** helps units run efficiently by slowing down pressure changes like load/unload cycles. This allows time to start and stop the compressors in a coordinated manner and permits lower operating pressures. Control Storage
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an be used in conjunction with a pressure/flow controller that isolates supply from demand, allowing lower plant pressure. It should be sized significantly larger than the typical rule-of-thumb of 1 gal. per cfm compressor output that was used in days of old.

Secondary Storage is used to provide gen-eral stored air at localized downstream locations with marginally sized supply lines. It supports air pressure for general end uses that may consume short-duration high flows that can't be serviced appropriately with existing pipe capacity.

Secondary Dedicated Storage (such as check-valve protected storage) can be used to support low-flow pressure-critical applications against transient high-flow events that may reduce local pressure.

Significant amounts of compressed air can slowly charge a properly sized storage tank over a long period of time to supply a high-flow, short-duration demand. **Secondary Dedicated Storage with Metered Recovery**
has a restricted inlet that limits fill rate and reduces peak compressed air demand. A lower peak may result in less-used compressors.

To learn more about compressed air storage, check out the book *Best Practices for Compressed Air Systems* ,
available on the Compressed Air Challenge (CAC) Website (www.compressedairchallenge.org). While you're there, consider registering for CAC training, including a February 20 Web-based Fundamentals seminar and/or one of the many in-person programs we offer around the country.
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