

# Technical Bulletin 03

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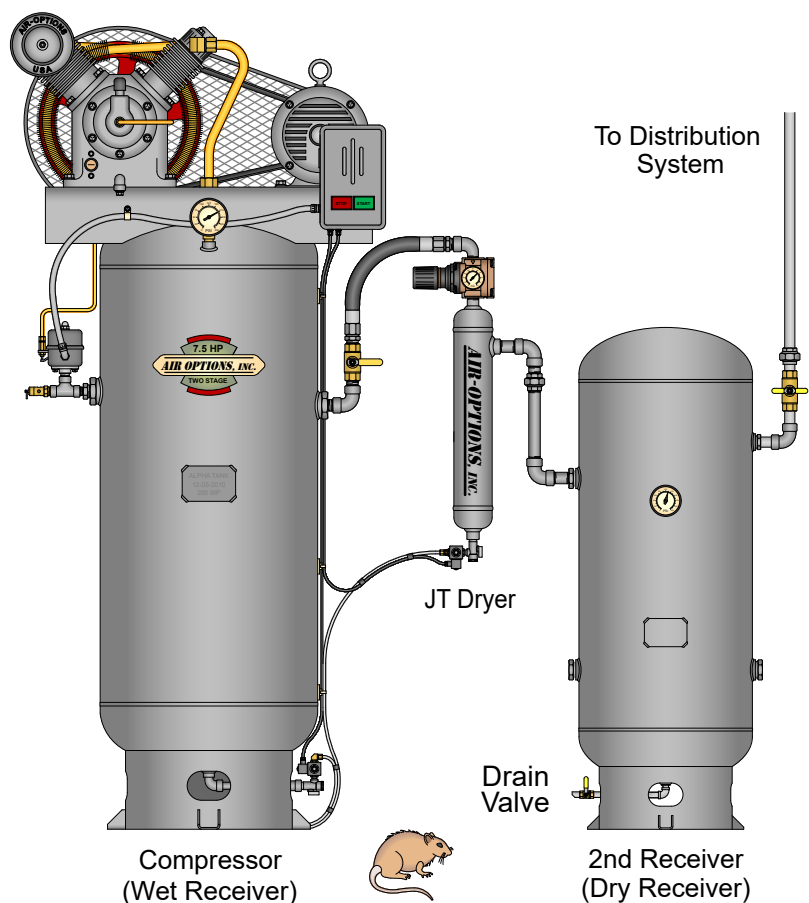
## Wet/Dry Receiver Installations

by Brian S. Elliott

Wet-dry receiver installations use two receiver tanks in an attempt to control water contamination in compressed air systems. The first receiver is referred to as the “wet” tank and the second receiver is referred to as the “dry” tank. The tanks are set up so that all of the airflow from the wet receiver is forced through the dry receiver before it is allowed into the distribution system. In effect, this arrangement uses the dry receiver as an after-cooler and trap. In northern climates, this setup can be minimally effective. However, in southern climates, a refrigerated dryer must be placed between the two receivers, as shown in the illustration below. The dryer is needed because the ambient temperatures in southern climates, especially during the summer months, are rather high. Consequently, the cooling effect that the dry receiver has on the compressed air is inadequate to provide any meaningful drying. In most cases, wet/dry tank configurations without an interconnecting dryer simply add additional equipment costs to the compression system without providing any real improvement in performance.

Typically, it’s a good idea to use a dry receiver after a refrigerated dryer because it provides excellent surge protection to the system. If the dry receiver is not used, wet air may surge through the dryer during moments of high flow rates. This, in turn, introduces liquid water into the distribution system, significantly diminishing the function of the dryer.

The wet receiver is usually the tank supplied with the compressor, or the primary receiver. The dry receiver is typically a stand-alone receiver, but the tank of your backup compressor can also be utilized for this duty. The size of the dry receiver is usually the same as the wet tank. For example, if your compressor has a 120 gallon tank then, generally speaking, the dry receiver should be 120 gallons. In any case, setting up a wet/dry receiver system with an interconnecting refrigerated dryer will provide the best overall drying performance that can be had for general-purpose compressed air.



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