

Drinking Water Tech Tips

Troubleshooting Bladder Pressure Tanks

What is a bladder pressure tank?

It is a type of tank containing pressurized air and water separated by a membrane (bladder). They are pre-charged with air at the factory. On average, a bladder pressure tank lasts 5-7 years.

How do bladder pressure tanks work?

As water pressure changes, the volume of air in a bladder pressure tank contracts and expands. Periodically, the amount of air in the tank should be measured and the tank recharged if the air is too low. Bladder pressure tanks do not provide any useful water storage capacity.

What functions do bladder pressure tanks serve?

- Maintain a desired range of water pressure in the distribution system.
- Minimize pump cycling, preventing frequent starts and stops protecting facilities from damage.
- Protect against water hammer.

Troubleshooting Guide

Check the bladder pressure tank air charge

- Follow the Manufacturer's instructions if you have the technical ability to do so safely.
- Hire a professional to evaluate the pressure tanks.
- Listen. You might be able to identify a waterlogged tank by carefully tapping the tank walls.
- Gentle tipping of the tank may identify a waterlogged tank by weight.

 **Helpful hint!** Take safety seriously and don't exceed your experience or knowledge.

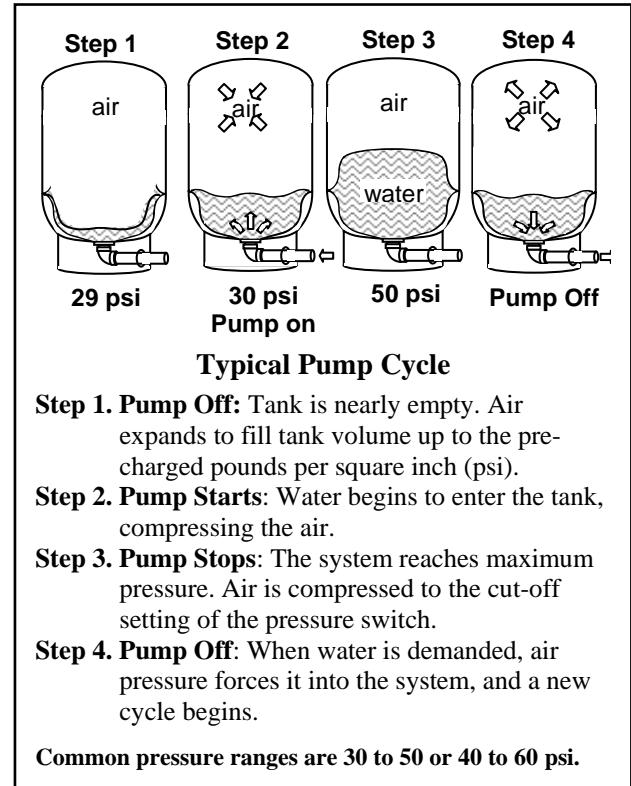
Check for waterlogged bladder pressure tank problems

A tank is waterlogged if it is completely filled with water or has too much water to function correctly.

Waterlogged bladder pressure tanks contribute to the following problems:

- The pump motor cycles (turns on and off) too often. Frequent cycling can shorten the lifespan of a pump. One to five-HP pump motors should not cycle more than six times an hour. If your pump is cycling, check to see if the tank(s) is waterlogged.
- Unsatisfactory coliform samples or taste and odor complaints. Waterlogged tanks contain stagnant water that can contribute to bacterial problems or taste and odor complaints.
- Premature tank failure. The inside walls of a waterlogged tank can corrode and weaken from the exposure to water.

 **Helpful hint!** It is often most cost-efficient to replace a waterlogged tank.



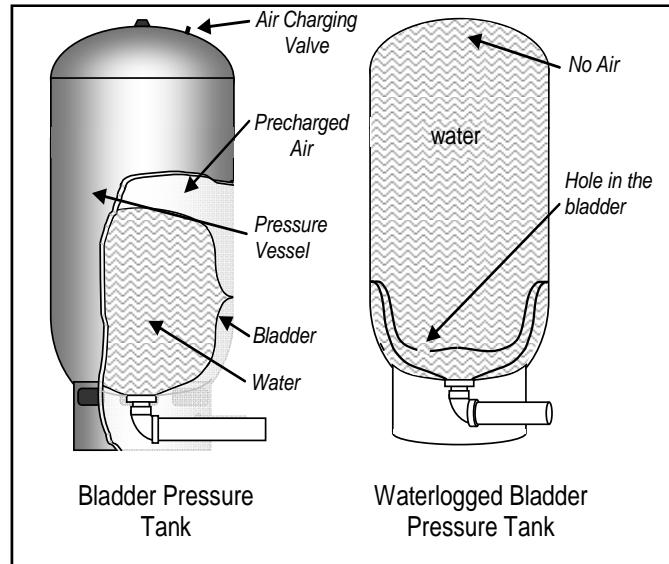
Common pressure ranges are 30 to 50 or 40 to 60 psi.

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If your tank is waterlogged, check for possible causes

Bladder pressure tanks can become waterlogged for many reasons. Some of the more common reasons are:

- Sediment, such as iron and manganese, can coat the surface of a bladder, causing it to harden and become less flexible.
- Sediments can plug the fill or draw line, preventing the tank from filling and emptying normally.
- High levels of chlorine can damage the bladder, causing it to become brittle and less flexible.
- Tanks sitting directly on the ground rust and lose structural integrity.
- Chlorinators give off corrosive vapors that cause the tank to rust.



**Remember! When working with bladder pressure tanks
it is important to read and follow the Manufacturer's Safety Warnings!**

For more information

We offer many publications online at <https://fortress.wa.gov/doh/eh/dw/publications/publications.cfm>

Pressure Relief Valves on Pressure Tanks (331-429), a one-page illustrated tech tip, explains design requirements, how pressure relief valves protect pressure tanks, and how to ensure pressure relief valves are approved and properly installed.

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