

PRESSURE TANKS

A pressure accumulator tank provides pressured storage so the pump does not have to turn on every time water is demanded. This means your water pressure will vary usually between 40 and 60 psi. This is because the tank pressures up to around 60 psi, shuts off the pump, then as water is used the tank will draw down in pressure. After up to approx. 15 gal of H₂O is used the pressure drops to 40 psi which then triggers the Well pump via pressure sensitive switch. If you have lackluster pressure in the shower your pressure tank may have lost its pre-charge. The most common problem is that most tanks, over time, do lose their factory set air pre-charge pressure of 28 to 38 psi. This can lead to over-expansion of the bladder inside the tank. A pinhole usually develops allowing the tank to become **waterlogged**.

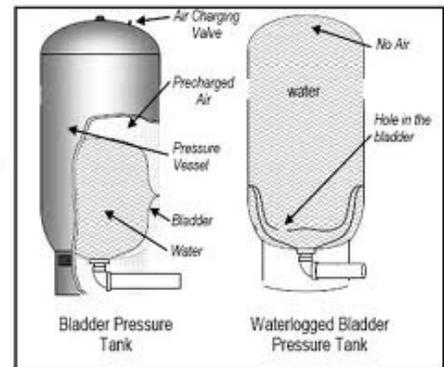
To test if your pre-charge is correct:

- Connect a garden hose to the hose bib connection at the front tee assembly of your tank.
- Turn off pump, then drain water completely through hose.
- Wiggle the tank -- if it still has water in it you had better replace it.
- Locate air fill valve at top of tank and take reading with tire gauge.
- Pressure should read between 28 to 38 psi depending on your pump cut in pressure.
- Pump it up if necessary to 2 psi below your pump kick-in pressure is 30 or 40 respectively.

Always check your pre-charge with tank empty of water every year. Most tanks last between 10 to 15 years then should be replaced. Many a flooded basement has been caused by people neglecting the pressure tank and its important Tee Assembly. This hardware assembly includes the Pressure Relief Valve, Pressure Cut-in/Cut-out switch, Hose bib connections and Pressure gauge. The Pressure Switch is usually housed in a small grey box at the front of the pressure tank. It senses changes in the system and opens or closes a set of electrical contacts to turn the pump on or off. If these contacts corrode due to old age, submersion in water or excessive current flow they can stick closed. This may cause a dangerous build-up of pressure as the pump runs constantly and some submersibles can pump in to the 100 psi range.

Top causes of Pump damage related to Pressure Tank:

1. Excessive ON/OFF cycling due to improper precharge or waterlogged tank.
2. Freeze up leaving pump running continuously.
3. Worn out Pressure Switch points.
4. Encrusted nipple between Tank Tee and Pressure Switch diaphragm.
5. Plugged flow restrictor on pipe coming in from the Well.



Pump Protection Device - In the event that any one of these problems occur, a pump protection device will save the pump. It is a small automatic relay located in the Motor Control Box. It senses amperage anomalies and turns the pump off before damage can occur. It is highly recommended that every system have one of these handy devices. They are an add-on option when purchasing a compatible pump/motor/and motor control combination.

Variable Speed Constant Pressure Pumping Systems - One can do away with the bulky pressure tank completely these days as it is no longer necessary. **The New Frequency Drive Controllers** will sense pressure demand and automatically adjust the RPM of the pump to meet the set pressure requirements with only a variance of a few PSI within the pressure system. Frequency drive systems are set at a certain pressure, say 65 PSI and the pressure should never drop below 60 PSI under normal conditions. Good for big families and also allows better operation of treatment equipment and appliances and fixtures, lawn sprinklers/irrigation, etc.