

Low Pressure/Low Flow

Which is it?



AIR & WATER QUALITY INC.

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We often get asked "Can you fix my low water pressure?" The answer is always yes, however, the solution may require anything from the simple adjustment of the pressure switch to the replacement of pumps, plumbing and or fixtures. To know what to do, you must first determine if the problem is low pressure or low flow. If after reading this article, you find that you need help with either the diagnostics or the implementation of a solution we will be glad to help you.

Pressure

To determine if pressure is the problem you need to go to the pressure tank and observe the pressure change as your well pump comes on and off. Have someone run water and watch the pressure gauge go up and down with each pump cycle. The pressure should change 20 pounds with each cycle. Common pressure ranges are 20-40, 30-50 and 40-60. If the change in pressure is greater than 20 pounds, you will need to have your pressure switch adjusted.

If you have a submersible pump (the pump is in the well), you can operate your system in the 40-60 pound range. Exceeding these limits can put undo strain on the pumping system and can cause the pressure relief valve to release water on the floor.

If you have a jet pump (the pump is in the basement), it is unlikely that you will be able to exceed the 30-50 range. You can adjust the pressure upward as long as the pump does not run excessively without shutting off. If the pressure is not excessively high for your pump, you should see a constant rise in the pressure gauge until the pump shuts off. You should adjust the switch to shut off at a lower value if the pump runs for more than 10 seconds without a noticeable increase in pressure.

Any pressure range of at least 30-50 pounds should be more than adequate for most people. If you can not adjust the pressure to the 30-50 pound range, you will need to consider a booster pump system or the replacement of your existing pump. Before you invest in more pumps, you should first check to determine if flow is a problem.

Flow

A flow problem is more difficult to diagnose and usually more difficult to solve. To determine if low flow is a problem you will check the following:

- Find your real needs.

- Check the pump to see if it is capable of delivering water at the rate you require.
- See if your house's plumbing can handle your needs.
- Determine if the individual fixtures can deliver water at a suitable rate.

Most household needs will be satisfied with a flow of 5-7 gallons per minute. To determine your needs, use the table below to calculate the peak flow you will require. Add together the flow rates of the fixtures you are likely to use at the same time.

Fixture Flow Requirements

Type	GPM
Sinks and Lavatories	2.5
Showers	2.5
Toilet	2.5
Washing machine	3.5
Dishwasher	1-2
Tubs	2.5-4
Whirlpools	3-7
Outside faucets	5-7

Next, check the pump capacity by doing an average pump test diagnostic. To do this, you will need a 2-5 gallon container graduated in 1 gallon increments and a stop watch. To perform the test, do the following:

1. Draw water until the pump comes on and then immediately shut the water off and wait until the pump shuts off.
2. Draw water in the graduated bucket until the pump comes on. When the pump comes on immediately shut off the water and time the length of time it takes for the pump to shut off.
3. Determine how much water was drawn (to the nearest ½ gallon) before the pump came on.
4. Divide the number of gallons you determined in step 3 by the number of seconds in step 4 and then multiply by 60. This is the average number of gallons/min you pump delivers to the house.

Now determine if your plumbing can handle the desired flows. Before doing this test make sure-

- The screens on your faucet aerators are clean.
- All the shower heads are clean.

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- Any installed cartridge filters are clean.

Perform the flow test by doing the following:

1. Go to the kitchen sink and turn on the faucet (before leaving it unattended make sure the drain is accepting all the water)
2. Go to a bath and turn on a shower.
3. Flush the toilet in that same bath and see if there is a noticeable drop in flow from the shower.

Repeat this for each bath. If you do not detect a noticeable loss of flow, the plumbing is properly sized for your existing fixtures.

If you find an inadequacy in your system with any of the above tests, we would be glad to consult with you to determine what options are best for your situation. If the above tests show no inadequacies, your only problem is with the fixtures. Each fixture has some type of flow restriction device installed in it. Sometimes these restrictors can be removed. If these restrictors can not be removed, you will need to consult with the fixture manufacturer to determine what your options may be.

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