



AIR & WATER QUALITY INC

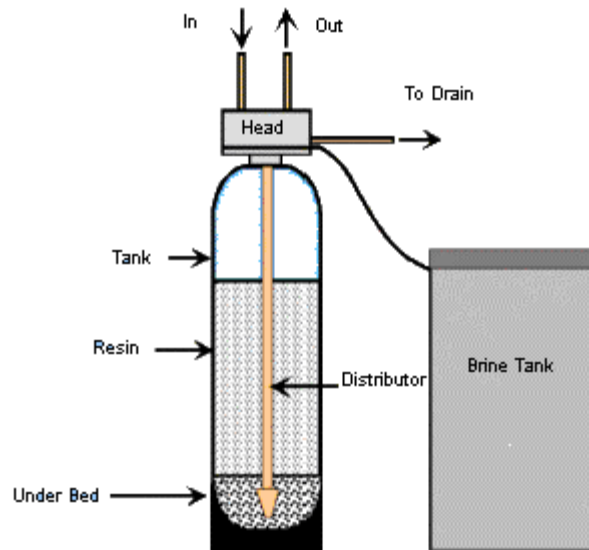
"Maine's Water Experts"

Water Conditioners

- *How they work*
- *Choosing the right system*
- *Maintenance costs*
- *What to expect*

How a Water Conditioner Works

Water conditioners (also known as water softeners) work on a principle called ion exchange. Unlike filtration which uses a mechanical process, they remove contaminants by a chemical process.



Water passes through the resin bed which is coated with either sodium or potassium. Certain minerals have a greater affinity to stick to the resin than the sodium or potassium, and will replace them in the resin bed. The sodium or potassium replaces these minerals in the treated water.

After a few days, the resin bed becomes saturated with minerals and needs to be regenerated. Contaminant minerals are flushed to the drain and the resin is recoated with salt from the brine tank. A Kinetico twin tank system will switch to the alternate tank and continue to supply treated water to the house. A single tank system will bypass untreated water to the house during regeneration. The brine tank will periodically need to be refilled with sodium or potassium based conditioning salt.

Below are some of the common minerals removed by a water conditioner:

<u>Contaminant</u>	<u>Associated Problems</u>
Dissolved or "clear water" iron.....	Staining, taste
Manganese.....	Staining, taste
Calcium and magnesium (hardness).....	Clogging of furnace and hot water heating coils, shower and dishwasher scale

What Type of Conditioner is Best?



Kinetico
Alternating Twin



Single Tank
Conditioner

Water conditioners traditionally have used a single tank with an electric timer to determine when regeneration was necessary. More recently, twin tank demand initiated regeneration systems have become available. The most efficient system available is a twin tank non-electric system made by Kinetico. Some of the advantages are outlined below:

- The two tanks allow one to be regenerated while the other is in service so that untreated water cannot be introduced into the house supply. Single tank systems bypass untreated water during regeneration. This can be a problem if the timer is not reset after a power outage and regeneration occurs during the day.
- A mechanical water meter is used instead of an electric timer. This reduces complexity, increases reliability, and eliminates the need for electricity.
- The system regenerates only when needed, saving money on salt usage (see “Estimated Cost of Operation”).
- The brine tank typically needs to be refilled 1 to 2 times per year versus 4 to 6 times per year for timer based systems.
- The system uses treated water from one tank to regenerate the other tank. This increases reliability and increases the life of the system. Single tank systems use untreated water which allows minerals to build up inside the system. Kinetico provides a 7 year warranty versus a 1 to 3 year warranty for other systems.
- The cost difference is usually recouped in 3 to 8 years between less salt usage and fewer service calls (see “Estimated Cost of Operation”).

The Kinetico system costs less and requires less maintenance in the long term. We also offer a traditional single tank timer based system if up front cost is the main concern.



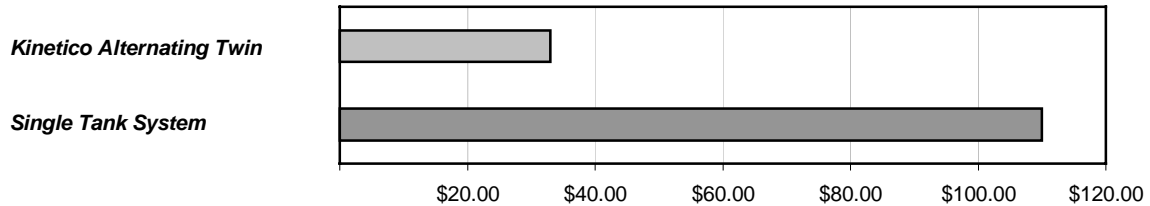
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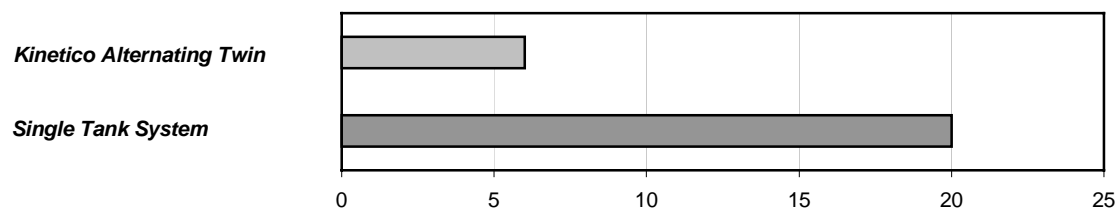
Estimated Cost of Operation

Figures are based on a family of four using 75 gallons per person per day, with 8 grains of compensated hardness.

Estimated Annual Cost of Conditioning Salt (Multiply by 3 for Potassium Salt)



Estimated Annual Salt Usage (40 lb Bags)



What to Expect

Below are some things to keep in mind when installing a water conditioner:

- Conditioning salt comes in 40 lb or 50 lb bags. Determine the number of bags of salt per year you should expect to use under “Estimated Cost of Operation.” Transporting and refilling the salt tank should be factored into your decision.
- If you are not installing an automatic backwashing filter, a cartridge filter will be installed ahead of the conditioner to protect it from small amounts of sediment and other particles. If the amount of sediment or rust increases, a backwashing filter may be needed.
- If you are unaccustomed to soft water, it may feel slippery. Hard water leaves a film that blocks the pores of your skin. Soft water prevents this film from forming and allows the natural oils in your skin to be released from your pores. This may feel different until you are used to it.
- If you are not installing a Kinetico system, be sure to reset the timer immediately after a power outage. If the system regenerates at the wrong time you can have problems (like a ruined load of laundry).
- If you water your lawn, you may want to put the system in bypass to save on salt and maintain water quality.
- If you introduce any chemicals to the well or do anything that may cause large amounts of sediment or rust to enter the system (like replacing a well pump), put the system in bypass and flush the heavy contaminants to an outside spigot.