

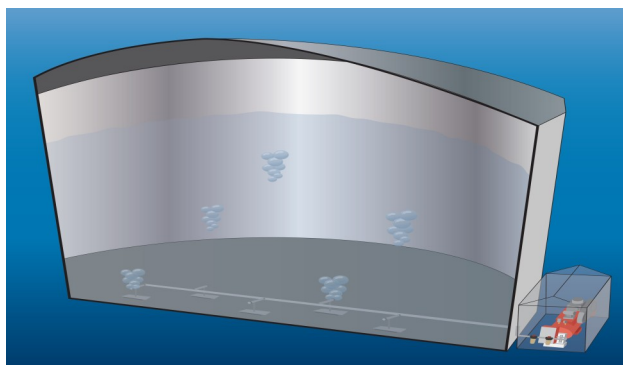
AquaBlend™ – Water Storage Tank Mixing

Key Benefits

- Homogenization of tank contents
- Filtered compressed air-fired large bubble mixing
- Zero in-tank maintenance
- Greater power efficiency than mechanical mixers
- Increase of supply quality/volume
- Disinfection depletion slowdown
- Reduction of tank flushing and batch chlorination dosing
- Reduction of DBP formation, nitrification, and taste/odor issues
- Elimination of thermal stratification
- Freezing/ice damage prevention

Why Mix a Water Storage Tank?

Potable water storage tanks are kept mostly full (greater than 70%) in order to provide a sufficient quantity of water for maintaining desired pressures, peak demand, fighting fires, and for other supply emergencies. Daily volume levels often do not fluctuate more than 5-10%, creating stagnant water and thermally-stratified layers within these tanks. Aged water can completely lose its disinfectant residual, resulting in bacterial regrowth and waterborne illness.



AquaBlend™ Mixing in Ground Storage Tank

By simply mixing a water storage tank, high quality water may be reliably provided to the end-user. For all climates, mixing is an effective tool for meeting regulatory requirements for control of microbial contaminants and reduction of disinfection byproducts (DBPs). In warm climates, mixing colder, recently-produced water with the solar-heated, top layer of tank volume homogenizes the contents and slows disinfection depletion. In cold climates, tank mixing greatly reduces ice formation and its ensuing damage. Also, for seasonally-populated locales, mixing will provide consistent water quality during low-demand, off-season periods.



Elevated Storage Tanks

All AquaBlend™ installations share the following characteristics:

- Bottom-up mixing in tanks of any size
- No submerged electrical components
- Non-clogging in-tank elements
- No maintenance of in-tank components
- Easy-access, external routine maintenance
- Low power usage

AquaBlend™ — Water Storage Tank Mixing (cont.)

Demonstrated Mixing

AquaBlend™ provides mixing in water storage tanks by firing programmed short bursts of filtered compressed air through patented engineered nozzles. The **AquaBlend™** controller air injection valve intermittently fires to blend from the tank bottom to the water surface. The large bubbles formed create a distinctive mixing pattern, or “tank roll.” The blending parameters of the **AquaBlend™** controller may be varied for optimum mixing and power utilization, or the **AquaBlend™** Automated Temperature Differential (ATD) system may be used.

Mixing Chloraminated System Tankage

Recent EPA rule changes requiring more stringent pathogen removal and maximum levels for DBPs have compelled water utilities to shift to chloramine-based systems. While its residuals are more stable and form fewer DBPs, chloramine disinfection break-down forms ammonia. In un-mixed storage tanks, naturally-occurring nitrifying bacteria prosper by consuming this ammonia as a food source. Thus, the total chlorine residual rapidly diminishes. Batch chlorination may be required to restore the chlorine residual and disinfect the biological population, but will also potentially increase DBP formation.

*Poor mixing (including stratification) can exacerbate water quality problems by creating zones within the storage facility where water age significantly exceeds the average water age throughout the facility.**



Stand Pipe

AquaBlend™ minimizes bacteria growth by ensuring disinfectant throughout the storage tank. Expensive tank cleaning, extensive water quality monitoring, and regular hypochlorite dosing may all be avoided using the **AquaBlend™** mixing system.

Contact Your Local Representative

Water Quality Problems Associated with Un-Mixed Potable Water Storage Tanks*

Chemical Issues	Biological Issues	Physical Issues
Disinfectant Decay	Microbial Regrowth	Corrosion
Chemical Contaminants	Nitrification	Temperature/Stratification
DBP Formation	Pathogen Contamination	Sediment
Tastes and Odors	Tastes and Odors	

**Adapted from US EPA Office of Ground Water and Drinking Water, Finished Water Storage Facilities, August 15, 2002*