



## WATER SOFTENERS & AUTOMATIC FILTERS



[www.americanplumber.com](http://www.americanplumber.com)

## The benefits of American Plumber® Water Softeners and Water Filtration Systems are crystal clear.

American Plumber is the leader in turning poor water quality into great quality water and making good water even better.

American Plumber Filtration Systems can make cloudy water clear, smelly water fresh and can reduce the staining caused by water high in iron, sulfur or manganese. In short, problem water is no problem with American Plumber by Pentair.

American Plumber Water Softening Systems can turn good water into better water by

reducing invisible hardness minerals found in virtually all fresh water. Your American Plumber Water Softener will improve water quality and taste.

### **Reduces**

- Hardness and Mineral Deposits
- Iron-Staining
- Scale Build-Up
- Soap Film

### **Increases**

- Plumbing and Appliance Life

- Effectiveness of Soaps, Detergents and Shampoo
  - Cleaner, Brighter Laundry
  - Smoother, Softer Skin
  - Fresher, Cleaner, Softer Hair

## Know Your Water Softeners... there is a difference.

American Plumber offers a full line of Water Softeners to match the demands of both commercial and residential applications. Our softeners are based on decades of research and development, providing you with the most advanced and reliable softening equipment available.

Our sleek Cabinet Style Softeners offer a space-saving footprint, easy access to controls, the convenience of a large salt opening and rugged polyethylene construction.

Our classic Two-Tank Systems feature advanced composite construction vessels for years of reliable service as well as an extra large brine tank capacity.

## Know Your Control Valves.

American Plumber has a full line of control valves, which carry a 5-year limited warranty. The valve body and meter modules are molded from glass-reinforced Noryl® for exceptional strength and durability.

American Plumber control valves are available in easy-to-use 12-Day Calendar Time Clock Models, which can be set to soften at pre-set intervals.

American Plumber On-Demand Models monitor water volume and initiate regeneration based on actual water used. This saves up to 50 percent on salt consumption

and reduces water consumption as well as sewage taxes/use fees. We'll save you water and money!

Whichever you choose, you can be confident that you will enjoy years of trouble-free performance.

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**AUTOMATIC WHOLE HOUSE FILTERS**

## SOFTENER CONTROL VALVES

- Saves up to 50% on salt
- Saves water and reduces sewage taxes\*
- Simple and dependable mechanical meter\*
- Initiates regeneration when needed based on water usage\*
- 1-inch inlet/outlet
- Bypass valve included
- Valve body and meter module molded from glass-reinforced Noryl® for exceptional strength and durability

**DEMAND REGENERATION**

- Saves water and salt
- Regenerates only when necessary, saving energy and money
- Monitors actual water usage

**TIME CLOCK**

- 12-day calendar clock
- Regenerates automatically at pre-set intervals

**WARRANTY**

- **10-year limited**  
— fiberglass resin tank  
— brine tank
- **5-year limited**  
— control valve
- **1-year limited**  
— brine valve



Model 5600  
Demand Valve



Model 5600  
Time Clock Valve



Model 2510  
Time Clock Valve

**PROGRAMMING THE DEMAND WATER SOFTENER**

Simply set the time of day and the capacity.

**SETTING THE TIME CLOCK WATER SOFTENER**

Set the time of day and pull out the pins for the days to regenerate.

**HOW DOES A WATER SOFTENER WORK?**

During normal conditioning, raw water enters the system through an inlet at the top of the resin tank. As it seeps down through the resin bed, hardness and scale are collected on the ion exchange sites of the resin. The result is the quality and convenience of conditioned water.

During the regeneration cycle, the system automatically regenerates the ion exchange resin while gently agitating the resin bed to remove foreign particles.

## AUTOMATIC WHOLE HOUSE SOFTENERS

### DEMAND REGENERATED

#### REDUCES

- Hardness and mineral deposits (calcium, manganese and iron)
- Iron-staining
- Scale build-up
- Soap film
- Water spots (on pots, pans, glassware, sinks and tubs)

#### INCREASES

- Plumbing and appliance life
- Effectiveness of detergents for cleaner, brighter wash

#### DEMAND REGENERATION

- Saves water and salt
- Regenerates only when necessary, saving energy and money
- Monitors actual water usage
- Two demand units available
  - 0.75 ft<sup>3</sup>
  - 1.0 ft<sup>3</sup>

PART NUMBER (MODEL NUMBER)	4002118 (WDES-24AP1C)	4002119 (WDES-32AP1C)
Resin Tank Size	10" x 35"	10" x 35"
Softener Style	Cabinet	Cabinet
Salt Storage	225 lbs	225 lbs
Resin Volume	0.75 ft <sup>3</sup>	1.0 ft <sup>3</sup>
Exchange Capacity (grains at pounds of salt)	24,000	32,000
Peak Flow @ 15 psi drop	11 gpm	12 gpm
Service Flow Rate	6 gpm	8 gpm
Total Hardness	60 grains	60 grains
Total Iron Removal	2 ppm	2 ppm
Backwash Rate	2.4 gpm	2.4 gpm
By-pass Valve	Yes	Yes
Valve Model (Fleck®)	5600 / Meter	5600 / Meter
Connection Size	1-inch	1-inch
Control Power Requirement	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA
Installation Space Requirements	13" x 22" x 45"	13" x 22" x 45"
Shipping Weight	75 lbs	85 lbs



Model 5600  
Demand Valve

## AUTOMATIC WHOLE HOUSE SOFTENERS

### DEMAND AND TIME CLOCK REGENERATED



#### REDUCES

- Hardness and mineral deposits (calcium, manganese and iron)
- Iron-staining
- Scale build-up
- Soap film
- Water spots (on pots, pans, glassware, sinks and tubs)

#### INCREASES

- Plumbing and appliance life
- Effectiveness of detergents for cleaner, brighter wash

#### DEMAND REGENERATION

- Saves water and salt
- Regenerates only when necessary, saving energy and money
- Monitors actual water usage
- Three units available
  - 1.0 ft<sup>3</sup>
  - 1.5 ft<sup>3</sup>
  - 2.0 ft<sup>3</sup>

#### TIME CLOCK

- 12-day calendar clock
- Regenerates automatically at pre-set intervals
- Three units available
  - 1.0 ft<sup>3</sup>
  - 1.5 ft<sup>3</sup>
  - 2.0 ft<sup>3</sup>

NOTE: See sizing chart on page 5

PART NUMBER (MODEL NUMBER)	DEMAND WATER SOFTENERS				TIME CLOCK WATER SOFTENERS	
	4002115 (WDES-32AP1)	4002116 (WDES-48AP1)	4002117 (WDES-64AP1)	4002114 (WTCS-64AP1)	4002112 (WTCS-32AP1)	4002113 (WTCS-48AP1)
Resin Tank Size	9" x 48"	10" x 54"	12" x 52"	9" x 48"	9" x 48"	10" x 54"
Brine Tank Size	18" x 33"	18" x 33"	18" x 40"	18" x 33"	18" x 33"	18" x 33"
Softener Style	Two-Tank	Two-Tank	Two-Tank	Two-Tank	Two-Tank	Two-Tank
Salt Storage	325 lbs	325 lbs	425 lbs	325 lbs	325 lbs	325 lbs
Resin Volume	1.0 ft <sup>3</sup>	1.5 ft <sup>3</sup>	2.0 ft <sup>3</sup>	2.0 ft <sup>3</sup>	1.0 ft <sup>3</sup>	1.5 ft <sup>3</sup>
Exchange Capacity (grains @ pounds of salt)	30,000	45,000	60,000	60,000	30,000	45,000
Peak Flow @ 15 psi drop	11 gpm	12 gpm	15 gpm	15 gpm	11 gpm	12 gpm
Service Flow Rate	9 gpm	10 gpm	13 gpm	13 gpm	9 gpm	10 gpm
Total Hardness	60 grains	60 grains	60 grains	60 grains	60 grains	60 grains
Total Iron Removal	2 ppm	2 ppm	2 ppm	2 ppm	2 ppm	2 ppm
Backwash Rate	2 gpm	2.4 gpm	3.5 gpm	3.5 gpm	2 gpm	2.4 gpm
By-pass Valve	Yes	Yes	Yes	Yes	Yes	Yes
Valve Model (Fleck®)	5600 / Meter	5600 / Meter	5600 / Meter	5600 / Meter	5600 / Timer	5600 / Timer
Connection Size	1-inch	1-inch	1-inch	1-inch	1-inch	1-inch
Control Power Requirement	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA
Installation Space Requirements	18" x 32" x 63"	18" x 42" x 69"	18" x 44" x 67"	30" x 33" x 61"	27" x 32" x 59"	28" x 42" x 63"
Shipping Weight	85 lbs	110 lbs	150 lbs	110 lbs	85 lbs	110 lbs

## SOFTENERS

# TIME CLOCK REGENERATED

### REDUCES

- Hardness and mineral deposits (calcium, manganese and iron)
- Iron-staining
- Scale build-up
- Soap film
- Water spots (on pots, pans, glassware, sinks and tubs)

### INCREASES

- Plumbing and appliance life
- Effectiveness of detergents for cleaner, brighter wash

### TIME CLOCK

- 12-day calendar clock
- Regenerates automatically at pre-set intervals
- Three units available
  - 1.0 ft<sup>3</sup>
  - 1.5 ft<sup>3</sup>
  - 2.0 ft<sup>3</sup>

NOTE: See sizing chart on page 5



PART NUMBER (MODEL NUMBER)	TIME CLOCK WATER SOFTENER		
	4002120 (WETCS-32AP125)	4002121 (WETCS-48AP125)	4002122 (WETCS-64AP125)
Resin Tank Size	9" x 47"	10" x 34"	12" x 52"
Brine Tank Size	18" x 33"	18" x 33"	18" x 33"
Softener Style	Two-Tank	Two-Tank	Two-Tank
Salt Storage	325 lbs	325 lbs	325 lbs
Resin Volume	1 ft <sup>3</sup>	1.5 ft <sup>3</sup>	2.0 ft <sup>3</sup>
Exchange Capacity (grains @ pounds of salt)	30,000	45,000	60,000
Peak Flow @ 15 psi drop	11 gpm	12 gpm	15 gpm
Service Flow Rate	10 gpm	11 gpm	12 gpm
Total Hardness	50 grains	60 grains	70 grains
Total Iron Removal	2 ppm	2 ppm	2 ppm
Backwash Rate	2 gpm	2 gpm	3.5 gpm
By-pass Valve	Yes	Yes	Yes
Valve Model (Fleck®)	2510	2510	2510
Connection Size	1-inch	1-inch	1-inch
Control Power Requirement	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA
Installation Space Requirements	27" x 33" x 56"	18" x 44" x 63"	30" x 33" x 60"
Shipping Weight	110 lbs	140 lbs	160 lbs



Model 2510  
Time Clock Valve



# RESIDENTIAL SIZING CHART

## HARDNESS FACTORS:

- 1 ppm Iron . . . . . 4 gpg
- 1 ppm Manganese . . . . . 8 gpg

## SIZING BASED ON:

- 60 gallons per person per day
- Three days minimum between regenerations

SOFTENER SIZING CHART											
COMPENSATED HARDNESS - GPG											
NUMBER OF PEOPLE		5	10	16	20	25	30	35	40	45	50
	1	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
	2	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	30,000	30,000
	3	20,000	20,000	20,000	20,000	20,000	30,000	30,000	30,000	40,000	40,000
	4	20,000	20,000	20,000	20,000	30,000	30,000	40,000	40,000	60,000	60,000
	6	20,000	20,000	20,000	30,000	30,000	40,000	40,000	60,000	60,000	60,000
	5	20,000	20,000	30,000	30,000	40,000	60,000	60,000	60,000	60,000	
	7	20,000	20,000	30,000	40,000	40,000	60,000	60,000			
	8	20,000	20,000	30,000	40,000	60,000	60,000				
	9	20,000	30,000	40,000	60,000	60,000	60,000				
	10	20,000	30,000	40,000	60,000	60,000					
	Model 4002118, 4002112, 4002115 & 4002120				Model 4002114, 4002117 & 4002122						
Model 4002112, 4002115, 4002119 & 4002120											
Model 4002113, 4002116 & 4002121											

## AUTOMATIC WHOLE HOUSE FILTERS

### RESIDENTIAL

- Two-Tank design (4002129)
- Tanks have fill ports to replenish media (4002127 and 4002128)
- Units include air injector and air vent (4002127 and 4002128)
- Large stand-alone brine tank for greater salt storage capacity (4002129)
- Simple metering system provides for a long and dependable operating life (4002129 and 4002125)
- Internal bypass automatically provides water to the house while the system is being regenerated
- Fiberglass, reinforced resin tank
- Low and easy maintenance
- Long-lasting and reliable softening media

#### PROGRAMMING THE TIME CLOCK STYLE FILTERS:

Simply set the time of day and pull out the pins for the days you want the unit to backwash.

#### PROGRAMMING THE DEMAND STYLE FILTERS:

Simply set the time of day and capacity.

#### 5600 CONTROL VALVE:

- Saves up to 50% on salt usage (4002129)
- Saves water and reduces sewage taxes
- Simple and dependable mechanical meter (4002129 and 4002125)
- Initiates regeneration, based on water usage (4002129 and 4002125)
- 1-inch inlet/outlet
- Bypass valve included
- Valve body and meter module molded from glass-reinforced Noryl® for exceptional strength and durability

#### WARRANTY:

- **10-year limited**  
— fiberglass resin tank  
— brine tank
- **5-year limited**  
— 5600 control valve
- **1-year limited**  
— brine valve



Model 5600  
Demand Valve



Model 5600  
Time Clock Valve

WARNING: Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

CAUTION: Water filter must be kept from freezing which can cause cracking of the resin tank and water leakage.

NOTE: Read all precautions in manual before installing and using this system.



## AUTOMATIC WHOLE HOUSE FILTERS

### SEDIMENT REDUCTION

- Reduces suspended particles like clay, silt and rust
- Multi-layer media effectively runs cloudy water clear
- Filter backwashes to rinse out any trapped particles
- Eliminates the need to replace messy cartridges
- Reliable time clock controls filter backwashing cycle
- Increases plumbing and appliance life
- Increases life of other water treatment devices

### ACTIVATED CARBON – TASTE/COLOR

- Reduces unpleasant tastes and odors from chlorine or organic substances
- Filter backwashes to rinse out any particles or sediment
- Eliminates the need to replace messy cartridges
- Reliable time clock controls filter backwashing cycle
- Increases plumbing and appliance life
- Increases life of other water treatment devices

PART NUMBER (MODEL NUMBER)	4002124 (W-410-SDF)	4002126 (W-410-TOF)
Description	Sediment	Taste & Odor
Resin Tank Size	10" x 47"	10" x 47"
Regenerant	None	None
Media Volume	1.0 ft³	1.0 ft³
Peak Flow @ 15 psi	7 gpm	7 gpm
Service Flow Rate	5 gpm	5 gpm
Taste and Odor Reduction	No	Yes
Sediment Reduction	Yes	No
Iron Reduction	No	No
Sulfur Reduction	No	No
pH Correction	No	No
Manganese Reduction	No	No
Hydrogen Sulfide Reduction	No	No
Tannin Reduction	No	No
Backwash Flow Rate	7 gpm	5 gpm
Filter Media Type	Mixed	Activated Carbon
1-inch Bypass Valve Included	Yes	Yes
Valve Model (Fleck®)	5600 / Timer	5600 / Timer
Connection Size	1-inch	1-inch
Control Power Requirement	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA
Installation Space Requirements	12" x 12" x 57"	12" x 12" x 57"
Shipping Weight	127 lbs	70 lbs



## AUTOMATIC WHOLE HOUSE FILTERS

### IRON/SULFUR REDUCTION

- Reduces staining caused by iron, manganese and sulfur
- Reduces "rotten egg," sulfur/hydrogen sulfide odors
- Controls yellow, orange or brown stains caused by iron
- Controls black stains from manganese
- Filter backwashes with potassium permanganate to flush out oxidized particles and regenerate itself
- Reliable meter controls system backwashing cycle
- Increases plumbing and appliance life
- Increases life of other water treatment devices

PART NUMBER (MODEL NUMBER)	4002125 (W-410-ISF)
Description	Iron/Sulfur
Resin Tank Size	10" x 47"
Potassium Permanganate Bucket	Yes
Regenerant	Potassium Permanganate
Media Volume	1.0 ft³
Peak Flow @ 15 psi	7 gpm
Service Flow Rate	5 gpm
Sediment Reduction	No
Iron Reduction	5 ppm
Sulfur Reduction	Yes
pH Correction	No
Manganese Reduction	Yes
Hydrogen Sulfide Reduction	Yes
Tannin Reduction	Minor
pH Range	6.5 to 8.5
Backwash Flow Rate	5 gpm
Filter Media Type	Greensand
1-inch Bypass Valve Included	Yes
Valve Model (Fleck®)	5600 / Timer
Connection Size	1-inch
Control Power Requirement	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA
Installation Space Requirements	12" x 24" x 57"
Shipping Weight	146 lbs



## AUTOMATIC WHOLE HOUSE FILTERS

### ACID NEUTRALIZING FILTER

- Raises pH of water supply to eliminate corrosion of piping
- Controls blue-green staining of fixtures
- Conditions water for removal of iron and manganese
- Filter backwashes to rinse out trapped sediment particles
- Media slowly dissolves raising the pH to neutral
- Increases plumbing and appliance life
- Increases life of other water treatment devices

PART NUMBER (MODEL NUMBER)	4002123 (W-415-ANF)
Description	Neutralizing
Resin Tank Size	10" x 54" with fill port
Regenerant	None
Media Volume	1.5 ft <sup>3</sup>
Peak Flow @ 15 psi	8 gpm
Service Flow Rate	5 gpm
Sediment Reduction	No
Iron Reduction	No
Sulfur Reduction	No
pH Correction	Yes
Manganese Reduction	No
Hydrogen Sulfide Reduction	No
Tannin Reduction	No
pH Range	5.0 to 6.0
Backwash Flow Rate	7 gpm
Filter Media Type	Calcite
1-inch Bypass Valve Included	Yes
Valve Model (Fleck®)	5600 / Timer
Connection Size	1-inch
Control Power Requirement	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA
Installation Space Requirements	12" x 12" x 62"
Shipping Weight	165 lbs



## AUTOMATIC WHOLE HOUSE FILTERS

### CHEMICAL-FREE IRON / MANGANESE REDUCTION

- Reduces iron and manganese without the use of chemicals
- Media reduces ferric iron (red water iron), ferrous iron (clear water iron), bacterial iron, colloidal iron and manganese
- Controls yellow, orange, or brown stains caused by iron
- Controls black stains from manganese
- Filter backwashes without chemicals
- Increases plumbing and appliance life
- Increases life of other water treatment devices

#### STYLES

- Two units available
  - pH at 6.5 to 8.5 and no manganese: use 4002127
  - pH at 6.0 and 1.5 mg/L manganese: use 4002128

PART NUMBER (MODEL NUMBER)	4002127 (W-410-CFA)	4002128 (W-410-CFM)
Description	Chemical-free Iron	Chemical-free Manganese
Resin Tank Size	10" x 54" with fill port	10" x 54" with fill port
Brine Tank Size	NA	NA
Salt Storage (lbs)	NA	NA
Regenerant	Backwash	Backwash
Media Volume	1.0 ft³	1.0 ft³
Peak Flow @ 15 psi	6 gpm	6 gpm
Service Flow Rate	5 gpm	5 gpm
Total Hardness	NA	NA
Sediment Reduction	No	No
Iron Reduction	30 ppm	30 ppm
Sulfur Reduction	No	No
pH Correction	No	No
Manganese Reduction	No	1.5 mg/L
Hydrogen Sulfide Reduction	No	No
Tannin Reduction	No	< 0.5 ppm
pH Range	6.5 to 8.5	6.0 or higher
Backwash Flow Rate	5 gpm	5 gpm
Filter Media Type	Special	Special
1-inch Bypass Valve Included	Yes	Yes
Valve Model (Fleck®)	5600 / Timer	5600 / Timer
Connection Size	1-inch	1-inch
Control Power Requirement	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA
Installation Space Requirements	12" x 12" x 62"	12" x 12" x 62"
Shipping Weight	146 lbs	146 lbs



## AUTOMATIC WHOLE HOUSE FILTERS

### CHEMICAL-FREE TANNIN REDUCTION

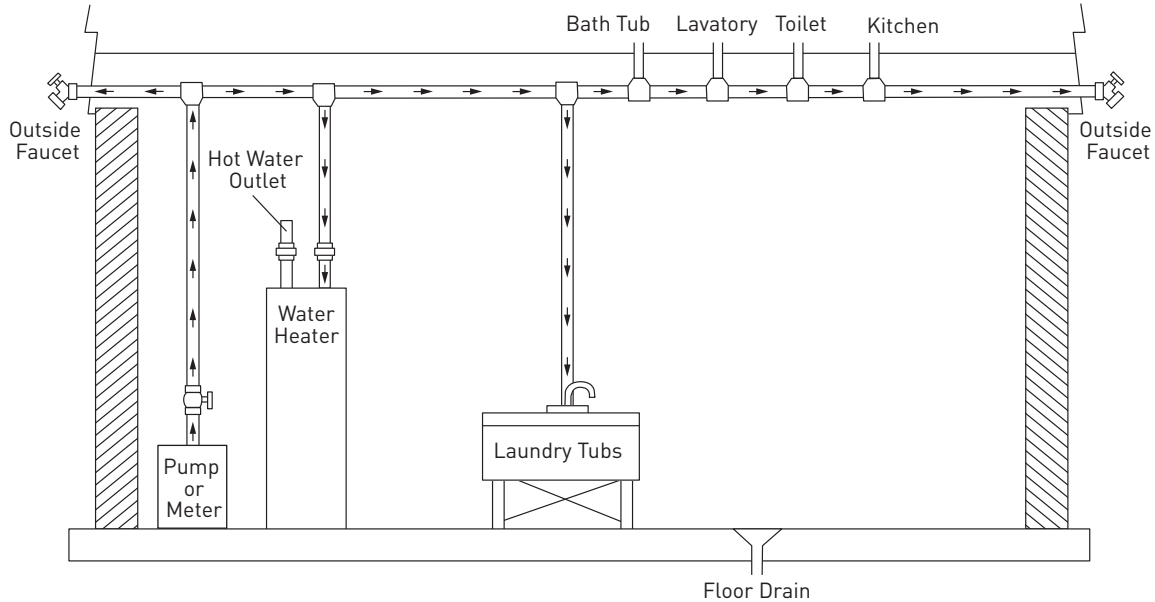
- Reduces organic color caused by decayed animal or vegetable/plant matter
- Works like a water softener with a special media
- Regenerates with sodium
- Reliable meter controls system backwashing cycle
- Increases plumbing and appliance life
- Increases life of other water treatment devices

PART NUMBER (MODEL NUMBER)	4002129 (W-410-OCF)
Description	Tannin
Resin Tank Size	10" x 54"
Brine Tank Size	18" x 33"
Salt Storage	325 lbs
Regenerant	Sodium
Media Volume	1.5 ft <sup>3</sup>
Peak Flow @ 15 psi	6 gpm
Service Flow Rate	5 gpm
Total Hardness	No
Sediment Reduction	No
Iron Reduction	Iron limit of 1 to 2 ppm
Sulfur Reduction	No
pH Correction	No
Manganese Reduction	No
Hydrogen Sulfide Reduction	No
Tannin Reduction	2000 ppm per ft <sup>3</sup>
pH Range	0-14
Backwash Flow Rate	5 gpm
Media Type	Special Resin
1-inch Bypass Valve Included	Yes
Valve Model (Fleck®)	5600 / Meter
Connection Size	1-inch
Control Power Requirement	120 VAC 50/60 Hz 15 W to 24 VAC 400 mA
Installation Space Requirements	18" x 42" x 62"
Shipping Weight	146 lbs

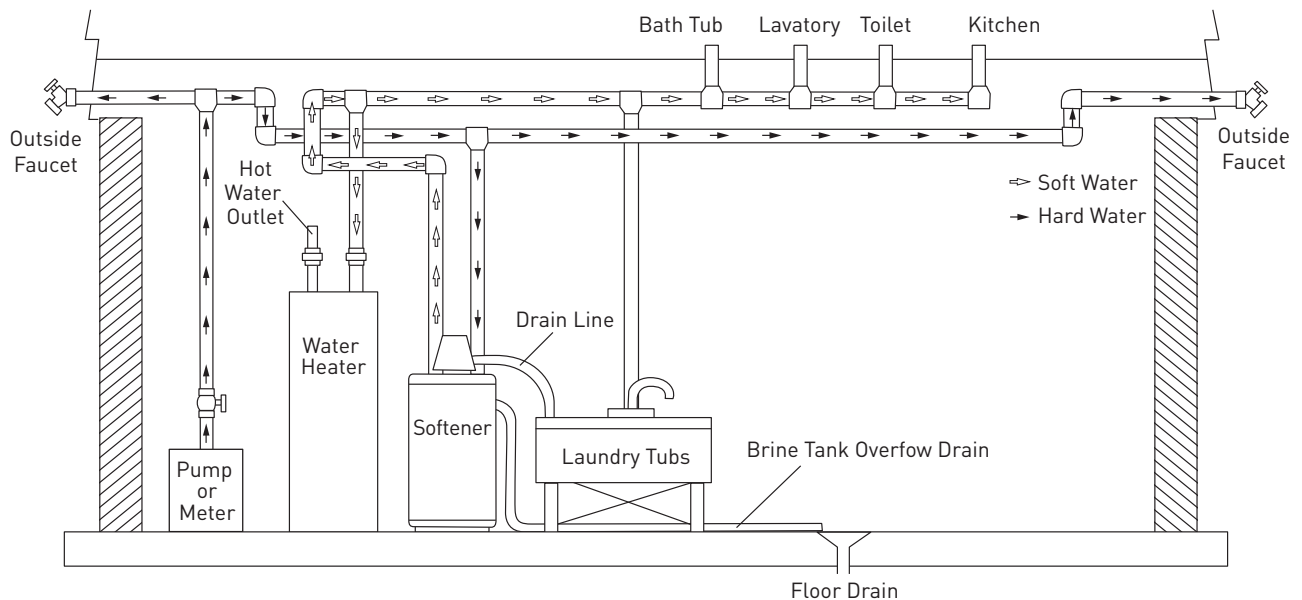


## INSTALLATION LOCATION

### STANDARD BASEMENT BEFORE INSTALLATION



### SOFTENED WATER DIAGRAM



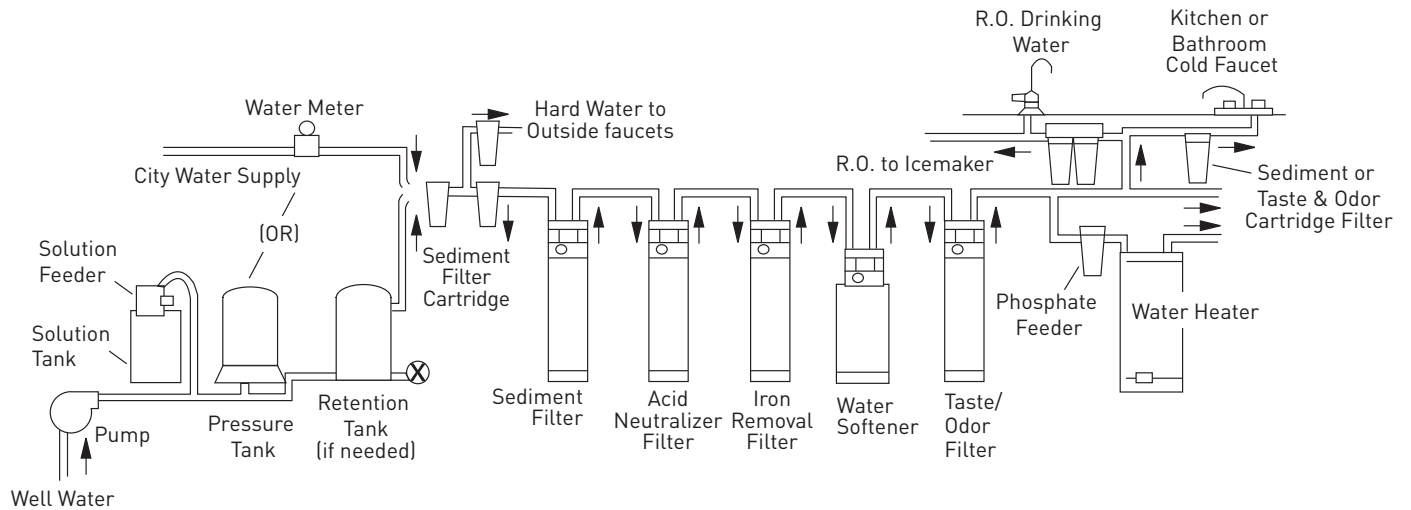
### LOCATION SUGGESTIONS

- Allow extra space in the event additional water treatment equipment is necessary.
- Since salt must be added to the brine tank, make sure the lid can be easily opened
- Install softener in a location which will allow for a length of 10 feet of piping between the softener and the inlet side of the hot water heater

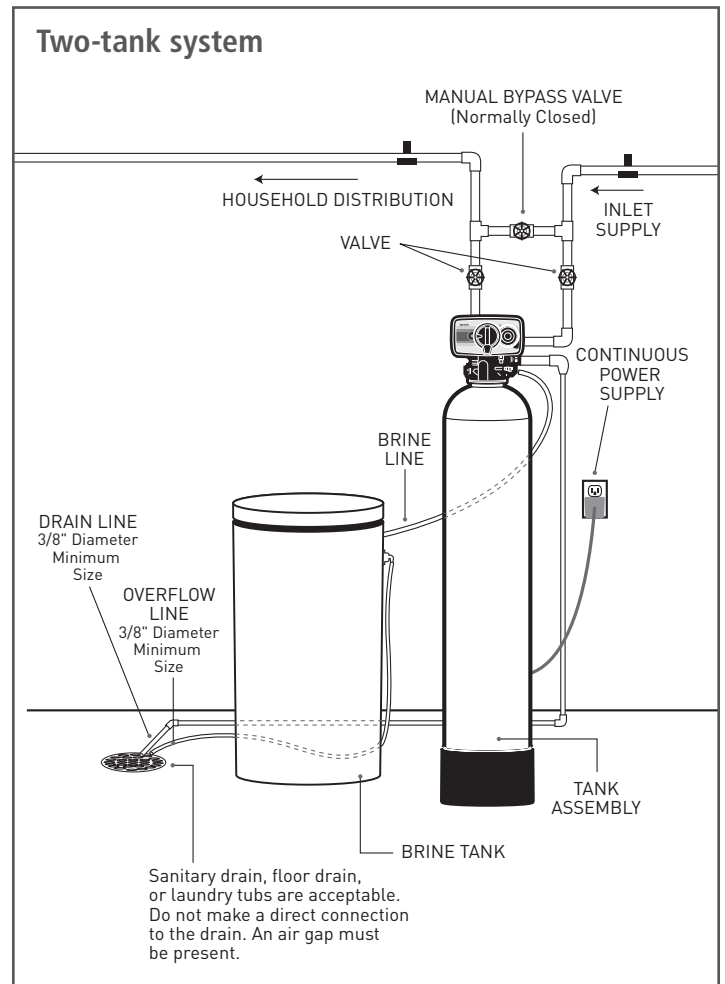
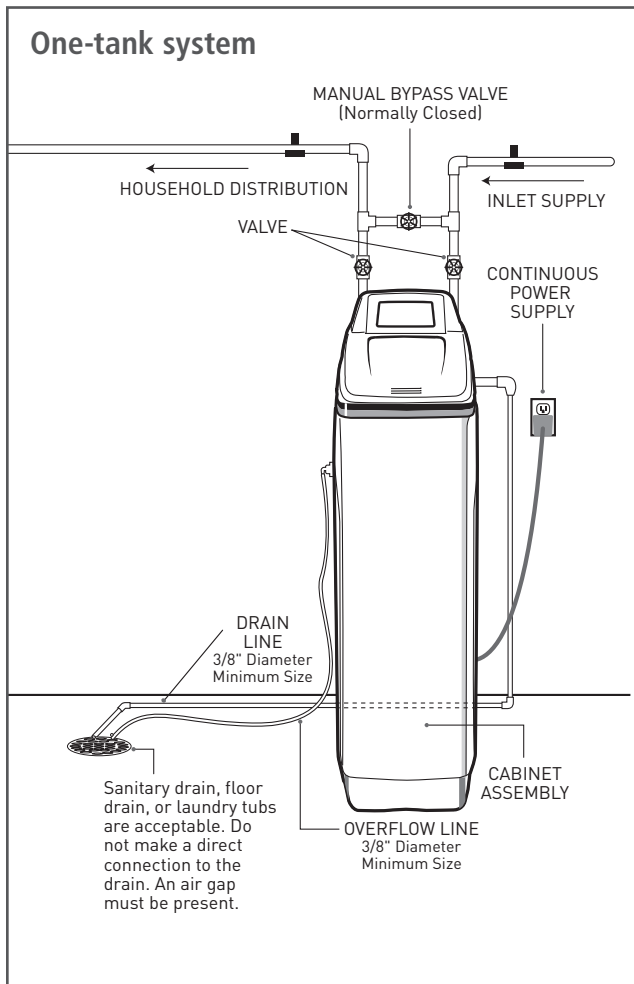


## INSTALLATION LOCATION

## THE PROPER ORDER TO INSTALL WATER TREATMENT EQUIPMENT



## PIPING DETAILS



## WATER PROBLEMS & SOLUTIONS

### VISUAL

OBSERVATION	APPLICATION	PROBLEM	TREATMENT LIMITS	SOLUTION
<b>LOOKS LIKE</b>				
Black Stains	POE	Manganese	6 to 15 ppm/pH Not Lower Than 6.7	Greensand Filter
Brown-Red Stains	POE	Iron Water (Clear)	10 ppm or Less @ 6.7 pH	Water Softener
Brown-Red Stains	POE	Iron Water (Clear)	10 ppm or More	Chlorination, Retention, Filtration, & Dechlorination
Green Stains	POE	Acid Water	6.8 to 5.5 pH	Acid Neutralizer
Green Stains	POE	Mine Water	Below 4.3 pH	Chemical Feed Caustic Soda or Soda Ash
Green Stains	POE	Corrosive water	N/A	Chemical Feed Polyphosphates
Red Stains	POE	Mine Water	Below 4.3 pH	Chemical Feed Caustic Soda or Soda Ash
Yellow Stains	POU	Tannins	Under 3 ppm	Reverse Osmosis
Yellow Stains	POE	Tannins	Under 3 ppm	Whole House Reverse Osmosis
Yellow Stains	POE	Tannins	Over 3 ppm	Chlorination, Retention, Filtration, & Dechlorination
Blue-green Water	POE	Acid Water	6.8 to 5.5 pH	Acid Neutralizer
Brown Water (no precipitate)	POE	Iron Water (Bacteria)	N/A	Chlorination & Carbon filter
Brown Water (no precipitate)	POE	Iron Water (Bacteria)	N/A	Oxidation
Brown Water	POE	Breakdown of Carbon	N/A	Replace Carbon Media or Cartridge
Red/Brown Slime	POE	Iron Water (Bacteria)	N/A	Chlorination & Carbon filter
Red Water (Settles out)	POE	Iron Water (Red)	1.0 ppm @ 6.7 pH	Water Softener
Red Water (Settles out)	POE	Iron Water (Red)	1 ppm to 10 ppm @ 6.7	Acid Neutralizer & Softener
Red Water (Settles out)	POE	Iron Water (Red)	0 to 10 ppm @ 6.7 pH	Manganese Greensand
Red Water (after 24 hours)	POE	Iron Water (Colloidal)	N/A	Chlorination, Retention, Filtration, & Dechlorination
Yellow Water	POU	Tannins	Under 3 ppm	Reverse Osmosis
Yellow Water	POE	Tannins	Under 3 ppm	Manganese Greensand
Yellow Water	POE	Tannins	Over 3 ppm	Chlorination, Retention, Filtration, & Dechlorination
Blackening of Aluminum	POE	Taste	High TDS & Alkalinity-Hardness Over 180 gpg	No treatment available
Blackening of Aluminum	POE	Taste	High TDS & Alkalinity-Hardness Under 180 gpg	Whole House Reverse Osmosis
Blackening of Stainless	POE	Corrosion of Stainless	N/A	Whole House Reverse Osmosis
Dark Beverages	POE	Iron Water (Clear)	10 ppm or Less @ 6.7 pH	Water Softener
Dark Beverages	POE	Iron Water (Clear)	10 ppm or More	Chlorination, Retention, Filtration, & Dechlorination
Failure of Copper Piping	POE	Corrosive Water	N/A	Chemical Feed Polyphosphates or Sodium Silicate
Pitting of Brass	POE	Corrosive Water	N/A	Chemical Feed Polyphosphates or Sodium Silicate
Pitting of Stainless	POE	Corrosion of Stainless	N/A	Reduce TDS
Clay	POE	Turbidity	N/A	Sediment Filter
Clay	POU	Turbidity	N/A	Sediment Filter
Clay	POE	Turbidity (New Well)	N/A	Sediment Filter
Clay	POU	Turbidity (New Well)	N/A	Sediment Filter
Clay	POE	Turbidity (Old Well)	N/A	Replace Well Screen and Sediment Filter
Clay	POU	Turbidity (Old Well)	N/A	Replace Well Screen and Sediment Filter
Cloudy Water	POE	Turbidity	N/A	Blow Down Water Heater
Fibers	POE	Organic Matter	N/A	Chlorination, Retention, & Carbon Filter
Fibers	POU	Organic Matter	N/A	Chlorination, Retention, & Carbon Filter
<b>LOOKS LIKE</b>				
Foamy Water	POE	Detergent	Limited Amounts	Carbon Filter
Foamy Water	POU	Detergent	Limited Amounts	Carbon Filter

## WATER PROBLEMS & SOLUTIONS

### VISUAL

OBSERVATION	APPLICATION	PROBLEM	TREATMENT LIMITS	SOLUTION
Grit	POE	Turbidity (New Well)	N/A	Sediment Filter
Grit	POU	Turbidity (New Well)	N/A	Sediment Filter
Grit	POE	Turbidity (Old Well)	N/A	Replace Well Screen and Sediment Filter
Grit	POU	Turbidity (Old Well)	N/A	Replace Well Screen and Sediment Filter
Mud	POE	Turbidity	N/A	Sediment Filter
Mud	POU	Turbidity	N/A	Sediment Filter
Oil Film	POE	Oily Water	Short Term	Carbon or Reverse Osmosis (New Water Source)
Rust Particles	POE	Turbidity	N/A	Sediment Filter
Rust Particles	POU	Turbidity	N/A	Sediment Filter
Rust Particles	POE	Turbidity	Low pH	Acid Neutralizer & Sediment Filter
Sand	POU	Turbidity	N/A	Sediment Filter
Sand	POE	Turbidity (New Well)	N/A	Sediment Filter
Sand	POE	Turbidity (Old Well)	N/A	Replace Well Screen and Sediment Filter
Scale	POE	Hard Water	100 gpg or Less	Water Softener
Scale	POE	Hard Water	Over 100 gpg	Two Softeners in Series
Scum	POE	Hard Water	100 gpg or Less	Water Softener
Scum	POE	Hard Water	Over 100 gpg	Two Softeners in Series
Sediment	POE	Turbidity	N/A	Sediment Filter
Silt	POE	Turbidity (New Well)	N/A	Sediment Filter
Silt	POE	Turbidity (Old Well)	N/A	Replace Well Screen and Sediment Filter
Soap Curd and Scum	POE	Hard Water	100 gpg or Less	Water Softener
Soap Curd and Scum	POE	Hard Water	Over 100 gpg	Two Softeners in Series

### TEXTURE

OBSERVATION	APPLICATION	PROBLEM	TREATMENT LIMITS	SOLUTION
<b>FEELS LIKE</b>				
Abrasive	POE	Grit	N/A	Sediment Filter
Abrasive	POU	Grit	N/A	Sediment Filter
Slippery or Slimy	POE	Soft Water	N/A	Open Bypass to Blend Hard and Soft Water

### ODOR

OBSERVATION	APPLICATION	PROBLEM	TREATMENT LIMITS	SOLUTION
<b>SMELLS LIKE</b>				
Chlorine	POE	Odor	N/A	Carbon Filter
Chlorine	POU	Odor	N/A	Carbon Filter
Earthy	POE	Odor	N/A	Carbon Filter
Earthy	POU	Odor	N/A	Carbon Filter
Fishy	POE	Odor	N/A	Carbon Filter
Fishy	POU	Odor	N/A	Carbon Filter

## WATER PROBLEMS & SOLUTIONS

### ODOR

OBSERVATION	APPLICATION	PROBLEM	TREATMENT LIMITS	SOLUTION
<b>SMELLS LIKE</b>				
Methane Gas	POE	Odor	N/A	Aeration
Oil	POE	Odor	N/A	Air Strip and Carbon Filter (2 cu. ft. tank)
Septic	POE	Odor	N/A	Heavily Chlorinate After Finding New Water Supply
Rotten Egg (Sulfur) in Hot Water	POE	Odor	N/A	Chlorination
Rotten Egg (Sulfur) in Hot Water	POE	Odor	N/A	Replace Anode Rod with Aluminum Rod
Rotten Egg (Sulfur)	POE	Tarnished Silverware	Up to 6 ppm / Max 6.7 pH	Greensand Filter
Rotten Egg (Sulfur)	POE	Tarnished Silverware	Over 6 ppm / Max 6.7 pH	Chlorination, Retention, Filtration, & Dechlorination
Rotten Egg (Sulfur)	POE	Tarnished Silverware	Up to 6 ppm / Max 6.7 pH	Aeration
Rotten Egg (Sulfur)	POE	Yellow Stains	Up to 6 ppm / Max 6.7 pH	Greensand Filter
Rotten Egg (Sulfur)	POE	Yellow Stains	Over 6 ppm / Max 6.7 pH	Chlorination, Retention, Filtration, & Dechlorination
Rotten Egg (Sulfur)	POE	Yellow Stains	Up to 6 ppm / Max 6.7 pH	Aeration
Rotten Egg (Sulfur)	POE	Black Stains	Up to 6 ppm / Max 6.7 pH	Greensand Filter
Rotten Egg (Sulfur)	POE	Black Stains	Over 6 ppm / Max 6.7 pH	Chlorination, Retention, Filtration, & Dechlorination
Rotten Egg (Sulfur)	POE	Black Stains	Up to 6 ppm / Max 6.7 pH	Aeration
Woody	POE	Odor		Carbon Filter

### TASTE

OBSERVATION	APPLICATION	PROBLEM	TREATMENT LIMITS	SOLUTION
<b>TASTES LIKE</b>				
Alkali	POU	Taste	High TDS & Alkalinity-Hardness Under 180 gpg	Reverse Osmosis
Alkali	POE	Taste	High TDS & Alkalinity-Hardness Under 180 gpg	Whole House Reverse Osmosis
Alkali	POE	Taste	High TDS & Alkalinity-Hardness Over 180 gpg	No treatment available
Bitter	POE	Taste	Low pH 4.5 to 5.5	Acid Neutralizer
Bitter	POE	Taste	pH Below 4.5	Chemical Feed - Soda Ash
Bitter	POE	Taste	Iron Above 3.0 ppm	Manganese Greensand
Brackish	POE	Taste	Up to 1800 ppm Sodium	Mix Bed DI
Brackish	POU	Taste	Up to 1800 ppm Sodium	Reverse Osmosis
Brackish	POE	Taste	Up to 1800 ppm Sodium	Whole House Reverse Osmosis
Brackish	POE	Taste	N/A	Repair Softener
Laxative Effect	POE	Taste	Up to 1800 ppm Sodium	Mix Bed DI
Laxative Effect	POU	Taste	Up to 1800 ppm Sodium	Reverse Osmosis
Laxative Effect	POE	Taste	Up to 1800 ppm Sodium	Whole House Reverse Osmosis
Laxative Effect	POE	Taste	N/A	Repair Softener
Metallic	POE	Taste	Low pH 4.5 to 5.5	Acid Neutralizer
Metallic	POE	Taste	Iron Above 3.0 ppm	Manganese Greensand
Salty	POE	Taste	Up to 1800 ppm Sodium	Mix Bed DI
Salty	POU	Taste	Up to 1800 ppm Sodium	Reverse Osmosis
Salty	POE	Taste	Up to 1800 ppm Sodium	Whole House Reverse Osmosis
Salty	POE	Taste	N/A	Repair Softener
Sour	POE	Taste	High TDS & Alkalinity-Hardness Over 180 gpg	No treatment available
Sour	POU	Taste	High TDS & Alkalinity-Hardness Over 180 gpg	Reverse Osmosis
Sour	POE	Taste	High TDS & Alkalinity-Hardness Over 180 gpg	Whole House Reverse Osmosis





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