



Culligan®

Culligan® Gold Series™ Automatic Water Conditioner Owners Guide





Thank You

And Welcome To Your New World Of Better Living With Culligan Water.

The Culligan Gold Series™ Water Softeners with Soft-Minder® Meter and Aqua-Sensor® sensing device are tested and certified by WQA against NSF/ANSI 372, CSA B483.1, and NSF/ANSI Standard 44 for the effective reduction of hardness (calcium and magnesium), barium and radium 226/228 as verified and substantiated by test data.

The Culligan Gold Series™ Water Softeners with Soft-Minder® Meter and Aqua-Sensor® sensing device are tested and certified by WQA against NSF/ANSI Standard 61 for material requirements.



For installations in Massachusetts, Massachusetts Plumbing Code 248 CMR shall be adhered to. Consult your licensed plumber for installation of this system. This system and its installation must comply with state and local regulations. The use of saddle valves is not permitted.

If this is your first experience having soft, conditioned water in your home, you'll be amazed at the marvelous difference it makes. We promise that you'll never want to be without it again.

Congratulations, too, on selecting one of the "first family" of water conditioners in the prestigious Culligan Gold Series. With Culligan's many years of knowledge and experience in water treatment, you can be confident that the model you selected has been designed and engineered to provide years of service with a minimum of care and attention.

Some localities have corrosive water. A water softener cannot correct this problem and so its printed warranty disclaims liability for corrosion of plumbing lines, fixtures or appliances. If you suspect corrosion, your Culligan Dealer has equipment to control the problem.

Sodium Information: Water softeners using sodium chloride for regeneration add sodium to the water. Persons who are on sodium restricted diets should consider the added sodium as part of their overall sodium intake.

Attention Culligan Customer:

The installation, service and maintenance of this equipment should be rendered by a qualified and trained service technician. Your local independently operated Culligan dealer employs trained service and maintenance personnel who are experienced in the installation, function and repair of Culligan equipment. This publication is written specifically for these individuals and is intended for their use.

We encourage Culligan users to learn about Culligan products, but we believe that product knowledge is best obtained by consulting with your Culligan dealer. Untrained individuals who use this manual assume the risk of any resulting property damage or personal injury.



Performance Data Sheets are included in this manual for various Culligan Gold Series™ Softener models. Refer to the Performance Data Sheet for your specific softener, as there are slight differences between the models. The softener warranty is located on page 67 of this Owner's Guide.

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Specifications

Culligan Gold Series™ Water Conditioners with Aqua-Sensor® Device or Soft-Minder® Meter

	9" Model	10" Model	12" Model	14" Model
Control Valve	1" 5-cycle Reinforced Thermoplastic	1" 5-cycle Reinforced Thermoplastic	1" 5-cycle Reinforced Thermoplastic	1" 5-cycle Reinforced Thermoplastic
Overall Conditioner Height	54 in	60 in	58 in	71 in
Media Tank Design	Quadra-Hull	Quadra-Hull	Quadra-Hull	Quadra-Hull
Media Tank Dimensions (Dia x Ht)	9 x 48 in	10 x 54 in	12 x 52 in	14 x 65 in
Salt Storage Tank Dimensions (Dia x Ht)	16 x 43 in	18 x 43 in	18 x 43 in	24 x 42 in
Exchange Media, Type and Quantity	Cullex® Media, 1.0 ft ³	Cullex Media, 1.5 ft ³	Cullex Media, 2.0 ft ³	Cullex Media, 3.0 ft ³
Underbedding, Type and Quantity	Cullsán® Underbedding, 12 lb	Cullsán Underbedding, 15 lb	Cullsán Underbedding, 16 lb	Cullsán Underbedding, 25 lb
Exchange Capacity @ Salt Dosage Per Recharge	19,086 gr @ 4.0 lb	28,629 gr @ 6.0 lb	35,614 gr @ 8.0 lb	53,540 gr @ 12.0 lb
	26,301 gr @ 8.0 lb	39,451 gr @ 12.0 lb	51,659 gr @ 16.0 lb	77,660 gr @ 24.0 lb
	30,787 gr @ 12.0 lb	46,180 gr @ 18.0 lb	60,532 gr @ 24.0 lb	90,986 gr @ 36.0 lb
Efficiency at rated salt dosage ^{1,6}	4,770 gr/lb @ 4 lb salt dosage	4,770 gr/lb @ 6 lb salt dosage	4,450 gr/lb @ 7 lb salt dosage	4,460 gr/lb @ 12 lb salt dosage
Freeboard to Media ²	14.5 in	14.5 in	20 in	25 in
Freeboard to Underbedding ³	44.5 in	47.5 in	46 in	59 in
Salt Storage Capacity	250 lb or 375 lb	375 lb	375 lb	600 lb
Rated Service Flow@Pressure Drop	9.0 gpm @ 14 psi	9.4 gpm @ 15 psi	10.0 gpm @ 15 psi	10.6 gpm @ 15 psi
Auxiliary Service Flow @ Pressure Drop	9.0 gpm @ 14 psi	9.4 gpm @ 15 psi	10.0 gpm @ 15 psi	10.6 gpm @ 15 psi
Total Hardness, Maximum	75 gpg	99 gpg	99 gpg	99 gpg
Total Iron, Maximum	5 ppm	5 ppm	5 ppm	5 ppm
Hardness to Iron Ratio, Min.	8 gpg to 1 ppm	8 gpg to 1 ppm	8 gpg to 1 ppm	8 gpg to 1 ppm
Operating Pressure	20-125 psi	20-125 psi	20-125 psi	20-125 psi
Operating Pressure (Canada)	20-90 psi	20-90 psi	20-90 psi	20-90 psi
Operating Temperature	33-120°F	33-120°F	33-120°F	33-120°F
Electrical Requirements	24V/60 Hz	24V/60 Hz	24V/60 Hz	24V/60 Hz
Electrical Power Consumption, Min/Max	3 Watts/ 35 Watts	3 Watts/ 35 Watts	3 Watts/ 35 Watts	3 Watts/ 35 Watts
Drain Flow, Maximum ⁴	1.6 gpm	1.6 gpm	2.6 gpm	6.6 gpm
Recharge Time, Average ⁵	68 min	57 min	52 min	66 min
Recharge Water Consumption, Average ⁵	35 gal	46 gal	51 gal	176 gal

1 The efficiency rated dosage is only valid at the 4 lb. salt dosage for the 9" model, 6 lb. salt dosage for the 10" model, 7 lb. salt dosage for 12" model and 12 lb. salt dosage for 14" model and is efficiency rated according to NSF/ANSI Standard 44.

2 Measured from top of media to top surface of tank threads (backwashed and drained).

3 Measured from top of underbedding to top of inlet fitting.

4 Backwash at 120 psi (830 kPa).

5 10 minute backwash, 4 lb. (1.8 kg) 9" model, 6 lb. (2.7 kg) 10" model, 7 lb. 12" model or 12 lb. 14" model salt dosage at 30 psi (204 kPa).



Introduction

Read this Manual First

Before you operate the Gold Series Water Softening System, read this manual to become familiar with the device and its capabilities.

Note: This system must be supplied with COLD WATER only.

Watch for Special Paragraphs

Please read the special paragraphs in this manual. Examples are shown below.

Safe Practices

Throughout this manual there are paragraphs set off by special headings.

Note: Check and comply with your state and local codes. You must follow these guidelines. For installations in Massachusetts, Massachusetts Plumbing Code 248 CMR shall be adhered to. Consult your licensed plumber for installation of this system. This system and its installation must comply with state and local regulations. The use of saddle valves is not permitted.

Note: Note is used to emphasize installation, operation or maintenance information which is important, but does not present any hazard. Example:

Note: The nipple must extend no more than 1 inch above the cover plate.

Caution! Caution is used when failure to follow directions could result in damage to equipment or property. Example:



Caution! Disassembly while under water pressure can result in flooding.

Warning! Warning is used to indicate a hazard which could cause injury or death if ignored. Example:



WARNING! Electrical shock hazard! Unplug the unit before removing the cover or accessing any internal control parts.

Serial Numbers

The control valve serial number is located on the back of the timer case.

The media tank serial number is located on the top surface of the tank.

Note: DO NOT remove or destroy the serial number. It must be referenced on request for warranty repair or replacement.

This publication is based on information available when approved for printing. Continuing design refinement could cause changes that may not be included in this publication.

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It's All So Easy, So Economical, So Efficient, So Enjoyable!

Kind To Skin And Complexion

Soft water will help prevent red, itchy or dry skin because there are no hardness impurities to cause soreness, no soap curd to coat the skin. Shaving is easier, smoother - either with blade or electric shaver.

Bathing And Showering

You'll use far less soap with conditioned water. Use your soap very sparingly - not as you did before soft water. Just a quick rinse removes all lather, leaving your skin pleasantly smooth and silky - because now it's free of sticky soap curd and film.

Saves Washing Costs. Helps Control Environmental Pollution

Soft water washes whiter and cleaner with less soap or detergent. Because the hardness impurities are removed, your soap can concentrate solely on washing. People usually find that they can reduce the amount of soap they use substantially. If you normally used a cup per wash load with hard water, try using only 1/3 cup depending on the size of your wash load and the degree of soil. Different amounts are required, but you can use less with softened water. An added bonus is the fact that your washable fabrics will last longer.

Super Hair Conditioning

Soft water is great for scalp and hair care. No insoluble deposits are formed. Hair is shinier, softer, more manageable. Reduce the amount of shampoo you have normally used.

Dishes Are A Delight

Washed by hand or in a dishwasher, glassware, dishes and silver wash cleaner, easier. Follow your dishwasher manufacturer's instructions. Soft water promotes sanitation because no greasy hard water film can form to collect or harbor bacteria.



Easier Housekeeping, Gleaming Fixtures

You'll be amazed at the marvelous difference. Just a swish of the cloth, and the bathtub or shower and fixtures are clean and sparkling. Imagine, no scouring! No hard water scum to cause rings, streaks, spots and stains. To keep their gleaming luster, simply wipe fixtures with a towel after use. Formica, tile, walls, floors, woodwork surfaces clean easier, stay clean longer. You'll save on cleaning aids and save on time.

Saves Water-Heating Energy, Helps Water-Using Appliances

Soft water reduces the formation of rock-like hard water scale which encrusts water heaters, hot water pipes, shower heads, and water-using appliances. This scale can cause premature maintenance and failure.

Elimination of hard water also provides substantial energy savings because scale acts as an insulator, wasting electricity or gas used to heat water.

Savings Galore

A water conditioner is frequently referred to as "the appliance that pays for itself". You'll find that your savings on soaps, detergents, cleaning aids, and personal care products will help your family's household budget. And if you place a price on your time, you'll be most happy with the time saved by your new family servant.

Water For Lawns And Household Plants

If possible, lawn sprinkling faucets should be supplied with hard water primarily because it is uneconomical to soften so much water.

Household plants are much more sensitive than lawns with respect to the kind of water which is best. First, because they receive no rainfall and, second, there is little or no drainage of the soil. Preferably they should be watered with rainwater or water which is low in mineral content such as distilled or demineralized water. Softened water is not recommended for house plants because a build-up of sodium in the soil may interfere with efficient absorption of water by the plant root system. Additional information may be obtained from your independently operated Culligan dealer.

Culligan Total Home

With the Culligan Total Home you will experience the above benefits in addition to the reduction of chlorine taste and odor for a fresh, clean taste and smell.



How Your Water Conditioner Works

Why Water Gets Hard And How It's Softened

All of the fresh water in the world originally falls as rain, snow, or sleet. Surface water is drawn upward by the sun, forming clouds. Then, nearly pure and soft as it starts to fall, it begins to collect impurities as it passes through smog and dust-laden atmosphere. And as it seeps through soil and rocks it gathers hardness, rust, acid, unpleasant tastes and odors.

Water hardness is caused primarily by limestone dissolved from the earth by rainwater. Because of this, in earlier times people who wanted soft water collected rainwater from roofs in rain barrels and cisterns before it picked up hardness from the earth.

Some localities have corrosive water. A softener cannot correct this problem and so its printed warranty disclaims liability for corrosion of plumbing lines, fixtures or appliances. If you suspect corrosion, your Culligan Man has equipment to control the problem.

Iron is a common water problem. The chemical/physical nature of iron found in natural water supplies is exhibited in four general types:

1. Dissolved Iron - Also called ferrous or "clear water" iron. This type of iron can be removed from the water by the same ion exchange principle that removes the hardness elements, calcium and magnesium. Dissolved iron is soluble in water and is detected by taking a sample of the water to be treated in a clear glass. The water in the glass is initially clear, but on standing exposed to the air, it may gradually turn cloudy or colored as it oxidizes.
2. Particulate Iron - Also called ferric or colloidal iron. This type of iron is an undissolved particle of iron. A softener will remove larger particles, but they may not be washed out in regeneration effectively and will eventually foul the ion exchange resin. A filtering treatment will be required to remove this type of iron.
3. Organic Bound Iron - This type of iron is strongly attached to an organic compound in the water. The ion exchange process alone cannot break this attachment and the softener will not remove this type of iron.
4. Bacterial Iron - This type of iron is protected inside a bacteria cell. Like the organic bound iron, it is not removed by a water softener.

When using a softener to remove both hardness and dissolved iron it is important that it regenerates more frequently than ordinarily would be calculated for hardness removal alone. Although many factors and formulas have been used to determine this frequency, it is recommended that the softener be regenerated when it has reached 50 - 75% of the calculated hardness alone capacity. This will minimize the potential for bed fouling. (Iron removal claims have not been verified by the Water Quality Association.)

If you are operating a water softener on clear water iron, regular resin bed cleaning is needed to keep the bed from coating with iron. Even when operating a softener on water with less than the maximum of dissolved iron, regular cleanings should be performed. Clean every six months or more often if iron appears in your conditioned water supply. Use resin bed cleaning compounds carefully following the directions on the container.



Caution! Do not use where the water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after the unit.



The Culligan Process

Your Culligan water conditioner consists of three basic components, (A) the Control Valve, (B) the Mineral Tank, and (C) the Brine System.

A. The exclusive Culligan control valve automatically performs a variety of tasks that are necessary for the proper operation of your water conditioner. These tasks, commonly referred to as cycles or operating positions, are Service, Regeneration, and Brine Refill.

1. **Service:** While the control valve is in the "Service cycle", hard water is directed down through the column of Cullex® resin where hardness minerals are removed from the water. The softened water is then directed into your household plumbing lines. The ability of the Cullex resin to remove hardness minerals needs to be periodically replenished; this is referred to as ...
2. **Regeneration:** While the control valve is in the "Regeneration cycle", water is first directed up through the column of Cullex resin to flush accumulated sediment out of the resin and down the drain. Then, the regenerant brine solution is slowly drawn from the bottom of the salt storage tank of the Brine System and is directed down through the column of Cullex resin, restoring the ability of the resin to remove hardness minerals from your water supply. Once completed, the regeneration cycle is followed by ...
3. **Brine Refill:** While the control valve is in the "Brine Refill cycle", a predetermined amount of water is directed to the salt storage tank of the Brine System so that additional salt can be dissolved to provide the brine solution that will be needed for the next regeneration cycle.

B. The Mineral Tank contains the Cullex resin column, Cullsan® underbedding, and an outlet manifold (the Culligan Total HOme also includes carbon media for chlorine taste & odor reduction). The number of gallons of hard water that can be softened by the Cullex resin column before it needs regeneration is called the "capacity" of the resin column, and depends upon the amount of hardness minerals in each gallon of water (expressed as grains per gallon) and upon the amount of regenerant brine solution (expressed as pounds of salt) passed through the resin column during regeneration.

Your Culligan service person, taking into account the hardness of your water and the amount of softened water your household may reasonably expect to use each day, has carefully established how often the softener will regenerate and how much salt will be used for each regeneration. This will ensure that all of your soft water needs will be fulfilled without using an excessive amount of salt.

C. The Brine System consists of a salt storage container and hydraulic Dubl-Safe™ valve. The salt storage container holds the salt that is used to make the regenerant brine solution. The hydraulic Dubl-Safe valve limits the amount of water that is returned to the salt storage tank during the brine refill cycle.

Since a predetermined amount of salt is dissolved with each brine refill cycle, the salt must be periodically replenished in order to maintain efficient operation. Your Culligan service person will be able to tell you about how often salt must be added to the salt storage container.

A. Culligan Gold Series™ Control

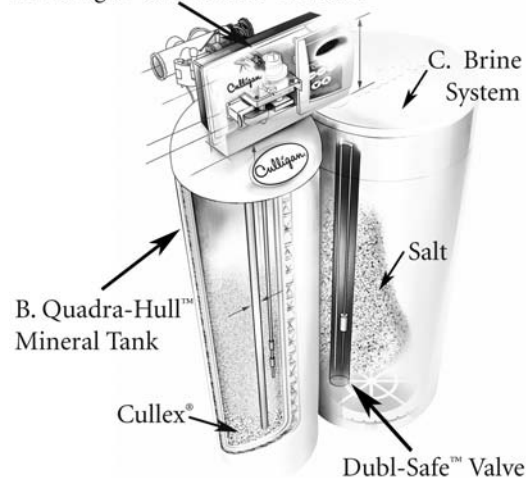


Figure 1



Modes of Operation

Water Meter Mode

In water meter mode, the controller keeps track of the quantity of water that has flowed through the resin bed. Based on the influent water hardness and the hardness capacity of the resin bed, a service life expectancy in the quantity of softened water is calculated and programmed into the control. When the set point is reached, regeneration is triggered. In delay regeneration mode, if the predict mode is turned on, the average daily water usage will be compared to the remaining capacity at the regeneration delay time to predict if another day's water usage can occur before requiring regeneration. If enough capacity is not present then the regeneration will occur at that time. If the predict mode is not selected the regeneration will start at time of regeneration. In immediate mode the regeneration starts when the capacity is exhausted. If time clock backup is set and the capacity has not been exhausted but the days since last regen is greater than time clock backup, setting the softener will immediately regenerate.

Aqua-Sensor® Mode

The Aqua-Sensor is a conductivity probe that senses when a hardness front passes through the resin bed. It functions independently of the influent water hardness so therefore, is useful in conditions when the influent water hardness varies throughout the year. It provides for the most efficient mode of operation. In addition to sensing when a resin bed is exhausted, it can also be used to determine when the brine solution is rinsed from the resin bed during the Brine Draw/Slow Rinse cycle triggering the control to move to fast rinse. This patented feature provides water savings by optimizing the amount of rinse water required to completely rinse out the resin bed.

Manual Regeneration

Pressing and holding the regen button for 5 seconds will initiate an immediate regeneration. The beeper will give one beep at the start of manual regeneration (when the motor starts to turn). In delay mode, pressing and releasing the regen button will light the regen icon for regeneration to occur at the set delay time. Pressing and releasing the regen button again will turn off the regen icon.

Predict Mode

The Predict Mode is used with the flow meter to determine the optimum regeneration point. Before the regeneration starts, the control will compare the remaining capacity value with the average daily water use. If the average daily water usage is less than the reserve capacity, the controller will wait 24 more hours before regeneration. If the reserve capacity is less than the average daily water usage, the control will initiate regeneration. This works in delay mode only. At any time, if the total capacity value is reached, the control will initiate an immediate regeneration.

Efficiency Mode

Water softeners historically use an optimum time range to control the Regeneration cycle steps, with a minimum and maximum time required to perform each step dependent on the salt being used, the hardness total and iron level. Culligan typically uses the maximum time range to insure effective Regeneration. However, if the iron content of the water to be softened is zero, and the hardness level is less than 20 gpg, Culligan has developed a new set of regeneration times geared to reducing salt and water usage. These times are defined under a new operating mode coined "Efficiency Mode". Compared to the present time values used, these new regeneration times and salt dosages are considerably less.



Preparation

Component Description

The water conditioner is shipped from the factory in a minimum of three cartons. Remove all components from their cartons and inspect them before starting installation.

Control Valve Assembly - Includes the regeneration control valve and the Accusoft® Plus circuit board. Small parts packages will contain additional installation hardware, and the conditioner Owner's Guide.

Media Tank - Includes Quadra-Hull™ media tank complete with Cullex® ion exchange resin, underbedding and outlet manifold (12" and 14" tanks are shipped without media).

Salt Storage Tank Assembly - Includes salt storage container with support plate and Dubl-Safe™ brine refill valve and chamber.

Bypass Valve - Includes the molded bypass valve, the interconnecting couplings, and the assembly pins.

Tools and Materials

The following tools and supplies will be needed, depending on installation method.

Note: Check and comply with your state and local codes. You must follow these guidelines.

For installations in Massachusetts, Massachusetts Plumbing Code 248 CMR shall be adhered to. Consult your licensed plumber for installation of this system. This system and its installation must comply with state and local regulations. The use of saddle valves is not permitted.

All Installations

- Safety glasses
- Phillips screwdrivers, small and medium tip.
- Gauge assembly (PN 00304450 or equivalent)
- Silicone lubricant (PN 00471507 or equivalent) - Do Not Use Petroleum-Based Lubricants
- A bucket, preferably light-colored
- Towels

Special Tools

- Torch, solder and flux for sweat copper connections
- Use only lead-free solder and flux for all sweat-solder connections, as required by state and federal codes.
- Threading tools, pipe wrenches and thread sealer for threaded connections.
- Saw, solvent and cement for plastic pipe connections.

Materials

- Brine line, 3/8" (PN 01009819 or equivalent)
- Drain line, 1/2" (PN 00303082, gray, semi-flexible; or PN 00331946, black, semi-rigid; or equivalent)
- Thread sealing tape
- Pressure reducing valve (if pressure exceeds 125 psi [860 kPa], PN 00490900 or equivalent)
- Pipe and fittings suited to the type of installation
- Water softener salt (rock, solar or pellet salt formulated specifically for water softeners)



Application

Water quality - Verify that raw water hardness and iron are within limits. Note the hardness for setting the salt dosage and recharge frequency.

Iron is a common water problem. The chemical/physical nature of iron found in natural water supplies is exhibited in four general types: Dissolved Iron, Particulate Iron, Organic Bound Iron and Bacterial Iron. Hardness sample kits are available through your local Culligan dealer.

Pressure - If pressure exceeds 125 psi (860 kPa), install a pressure reducing valve (see materials checklist). On private water systems, make sure the minimum pressure (the pressure at which the pump starts) is greater than 20 psi (140 kPa). Adjust the pressure switch if necessary.



Caution! Do not use where the water is microbiologically unsafe or with water of unknown quality adequate disinfection before or after the unit.

Caution! The use of a pressure reducing valve may limit the flow of water in the household.

Temperature - Do not install the unit where it might freeze, or next to a water heater or furnace or in direct sunlight. Outdoor installation is not recommended, and voids the warranty. Use the Culligan Outdoor Gold or Medallist Series Softeners for outdoor installations. The Culligan Outdoor Gold or Medallist Series Softeners have been certified by Underwriter's Laboratories for outdoor installation. If installing in an outside location, you must take the steps necessary to assure the softener installation plumbing, wiring, etc. Areas well protected from the elements (sunlight, rain, wind, heat, cold), contamination, vandalism, etc. as when installed indoors.

Location

Space requirements - Allow 6-12 inches (15-30 cm) behind the unit for plumbing and drain lines and 4 feet (1.3 meters) above for service access and filling the salt container.

Floor surface - Choose an area with solid, level floor free of bumps or irregularities. Bumps, cracks, stones and other irregularities can cause the salt storage tank bottom to crack when filled with salt and water.

Drain facilities - Choose a nearby drain that can handle the rated drain flow (floor drain, sink or stand pipe). Refer to the Drain Line Chart, Table 3 (page 18), for maximum drain line length.

Note: Most codes require an anti-siphon device or air gap. Observe all local plumbing codes and drain restrictions. The system and installation must comply with all state and local laws and regulations.

Electrical facilities - A 10-foot cord and wall mount plug-in transformer are provided. The customer should provide a receptacle, preferably one not controlled by a switch that can be turned off accidentally. Observe local electrical codes.

Note: The softener works on 24 volt - 60 Hz electrical power only. Be sure to use the included transformer. Be sure the electrical outlet and transformer are in an inside location to protect from moisture. Properly ground to conform with all governing codes and ordinances.

Note: P.N. 01012956 and P.N. 01014897 plug-in transformer are rated for indoor installations only. P.N. 01015972 plug-in transformer is rated for indoor/outdoor installations. (Non-Aqua-Sensor)



Installation

Note: Read this section entirely before starting the installation. Follow all applicable plumbing and electrical codes.

For installations in Massachusetts, the Commonwealth of Massachusetts Plumbing Code 248 CMR shall be adhered to. Consult your licensed plumber for installation of the system. This system and its installation must comply with state and local regulations. The use of saddle valves is not permitted.

With the exception of media containers, open the remaining containers, remove all the components, and inspect them before starting installation.

Placement

Refer to figure 2 for system placement.

- Set the media tank on a solid, level surface near water, drain and electrical facilities.
- Set the brine system on a flat, smooth, solid surface as near the media tank as possible.

Tank Assembly

- 9" and 10" tanks are filled with media at the factory.
- Before the unit can be connected to the plumbing the manifold must be inserted and media loaded into the tank for 12" and 14" units.



Caution! Do not lay the tank down unless a suitable lifting device is available. Personal injury and damage to the unit can result if dropped.

Position the Mineral Tank(s)

Determine the location for the mineral tanks(s) prior to loading, since they will be difficult to move after the underbedding and gravel are loaded.

Note: Air gap = 2x pipe diameter or 1 inch diameter, whichever is larger.

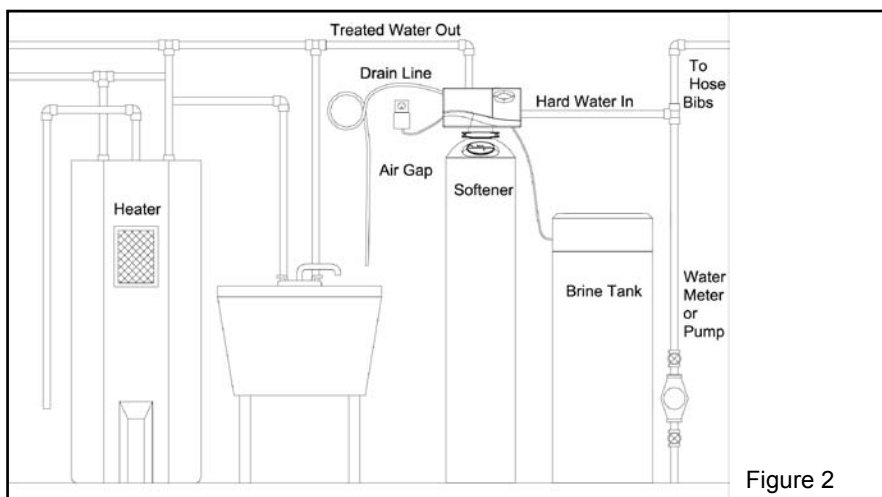


Figure 2



Loading the Tank (12" and 14" Tanks)

1. Position the tank so that the Culligan® logo is in the front.
2. Remove the inlet strainer.
3. Install the outlet manifold into the tank (Figure 3).
4. Cover the tops of the manifolds with a clean rag.
5. Using a large-mouth funnel, load the Culligan underbedding through the top of the tank.



Caution! DO NOT allow the outlet manifold to move when loading the media. The manifold must remain vertical to ensure a good seal at the gasket. Rap the tank near the bottom with a rubber mallet to level the sand.

6. Aqua-Sensor® Installation (optional device)
 - A. Measure the sensor cable length as shown in Figure 4 and Table 1 (the Aqua-Sensor cord is set at the factory for a 9" tank).
 - B. Loosen the small Aqua-Sensor Plug, a needle-nose pliers works best.
 - C. Moisten the cable sheath and slide the cable grip up or down to the proper cable length.
 - D. Tighten the small Aqua-Sensor plug so that the fitting cannot slide along

Dimension "X" is the exposed length the Aqua-Sensor® cord (cord length from the Aqua-Sensor plug to the circuit board connector). You can then verify the Aqua-Sensor probe is inserted to the proper depth by confirming dimension "X" is at the corrected length.

Tank Model	X	Y
9" Quadra-Hull™ Tank	34 1/2"	40"
10" Quadra-Hull Tank	30 1/2"	44"
12" Quadra-Hull Tank	32 1/2"	42"
14" Quadra-Hull Tank	22 1/2"	52"

Table 1

Note: There must be no kinks or bends in the cable.

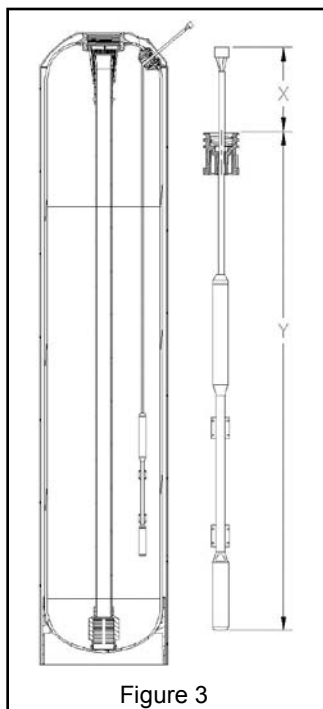


Figure 3

the cable.

- E. Insert the probe and cable through the Aqua-Sensor port.
7. Load the tank with the Cullex® ion exchange resin. Leveling is not required.
9. Remove the funnel.

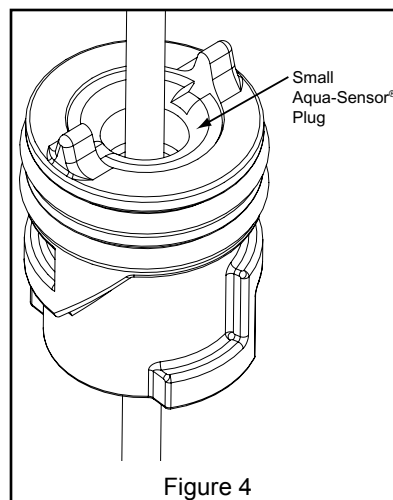


Figure 4

10. Install the inlet strainer making sure to thread the strainer until it bottoms out on the tank thread. Failure to install the strainer correctly can cause the control to leak.



- Align the manifold with the center opening in the valve, and press the valve onto the adapter firmly.

Note: Make sure to push the valve straight down onto the manifold. If the valve is cocked, it may cause the o-ring to slip off the manifold.

- Assemble the tank clamp to the control, and tighten the clamp screw.

Note: The clamp and valve will be able to rotate on the tank until pressure is applied.

Flow Control Eductor Nozzle

Listed below is the recommended eductor nozzle to be used at various salt dosages.

Table 2 - Flow Restrictors

Unit	Backwash Flow	Nozzle	Throat	Brine Refill Flow
9"	2.0 gpm (#2 Brown)	Blue*	Light Brown*	0.45 gpm
10"	2.0 gpm (#2 Brown)	Beige	Light Brown	0.45 gpm
12"	3.5 gpm (#3 Green)	Beige	Light Brown	0.8 gpm
14"	5.5 gpm (Black)	Green	Blue	0.8 gpm

* Standard from factory

Refer to Figure 6 for a visual on changing the eductor nozzle and the backwash flow control.

Eductor Nozzle Replacement

- Remove the three screws on the eductor cap and remove the cap.
- Remove the eductor assembly.
- Remove the eductor screen from the assembly
- Remove the blue nozzle and replace it with the beige nozzle. Make sure to put the o-ring on the correct nozzle.
- Reverse the procedure to reassemble. To prevent leaks, ensure that the gasket is in the proper position.

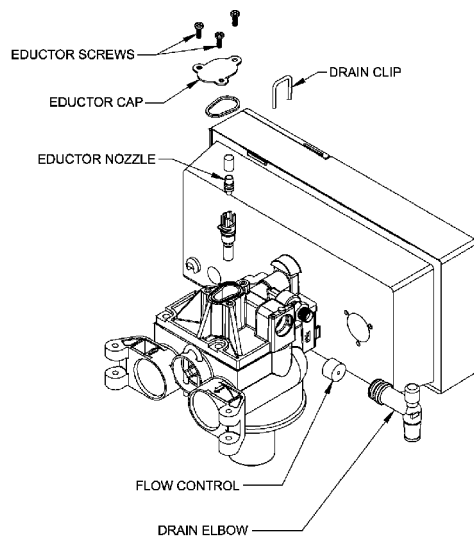


Figure 5

Backwash Flow Control Replacement

- Remove the drain clip and pull the drain elbow straight off.
- Remove the backwash flow control located behind the elbow.
- Install the correct backwash flow control.

Note: The number on the flow control should face into the valve body.

- Reverse the procedure to reassemble.

Note: Dip switch #5 is to be in the "off" position for 9" and 10" Tanks (0.45 gpm refill flow control). Dip switch 5 is to be in the "on" position for 12" and 14" tanks (0.80 gpm brine refill flow control).



Plumbing Connections

Shipped with each softener is a Culligan® bypass valve, which is used to connect the softener to the plumbing system. The bypass allows the softener to be isolated from the water service line if service is necessary while still providing water to the home. The bypass valve can be directly plumbed into the system, or can be connected with the following optional sweat connection kits;

- P/N 01010783 1" Sweat Copper Adapter Kit
- P/N 01016564 3/4" Sweat Copper Adapter Kit
- P/N 01016565 3/4" Elbow Sweat Copper Adapter Kit



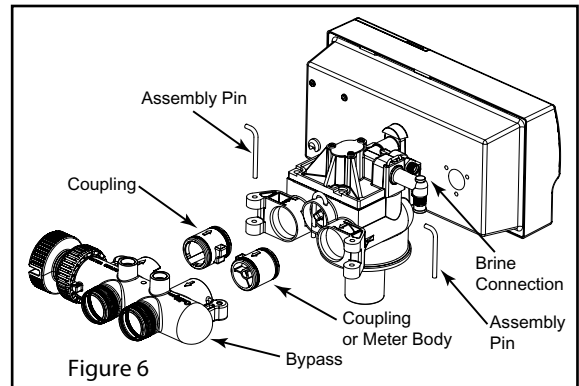
Caution! Close the inlet supply line and relieve system pressure before cutting into the plumbing! Flooding could result if not done!

Caution! When making sweat connections, use care to keep heat away from the plastic nuts used to connect the plumbing to the bypass. Damage to these components may result otherwise.

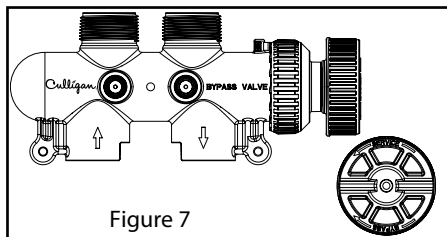
Bypass Valve Installation

The bypass valve connects directly to the control valve with a pair of couplings and two assembly pins (Figure 6). Lubricate all o-rings on the couplings with silicone lubricant.

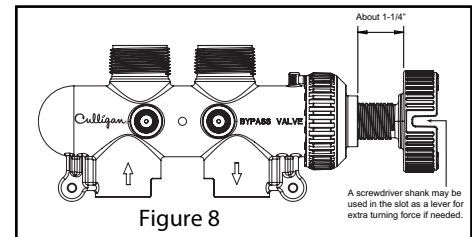
On Soft-Minder® meter controls, the meter replaces the coupling on the outlet side of the control. The meter body fits in the same space as the coupling between the control valve and the bypass. Make sure that the arrow on the flow meter is pointing in the direction of flow (Figure 6).



Note: If the ground from the electrical panel or breaker box to the water meter or underground copper pipe is tied to the copper water lines and these lines are cut during installation of the bypass valve, an approved grounding strap must be used between the two lines that have been cut in order to maintain continuity. The length of the grounding strap will depend upon the number of units being installed. In all cases where metal pipe was originally used and is later interrupted by the bypass valve to maintain proper metallic pipe bonding, an approved ground clamp c/w not less than #6 copper conductor must be used for continuity. Check your local electrical code for the correct clamp and cable size.



To bypass, turn the blue knob clockwise (see directional arrow on end of knob) until the knob stops as shown. DO NOT OVERTIGHTEN! (Figure 7).



To return to service, turn the blue knob counter-clockwise (see directional arrow on the end of knob) until the knob stops as shown. DO NOT OVERTIGHTEN! (Figure 8).



Drain Line Connection

Refer to Table 3 for drain line length and height limitations.

- Remove 1/2" pipe clamp from the small parts pack included with the control.
- Route a length of 1/2" drain line from the drain elbow to the drain.
- Fasten the drain line to the elbow with the clamp.
- Secure the drain line to prevent its movement during regeneration. When discharging into a sink, or open floor drain, a loop in the end of the tube will keep it filled with water and will reduce splashing at the beginning of each regeneration.

Note: Waste connections or drain outlets shall be designed and constructed to provide for connection to the sanitary waste system through an air gap of 2 pipe diameters or 1 inch, whichever is larger.

Note: Observe all plumbing codes. Most codes require an anti-siphon device or air gap at the discharge point. The system and installation must comply with state and local laws and regulations.

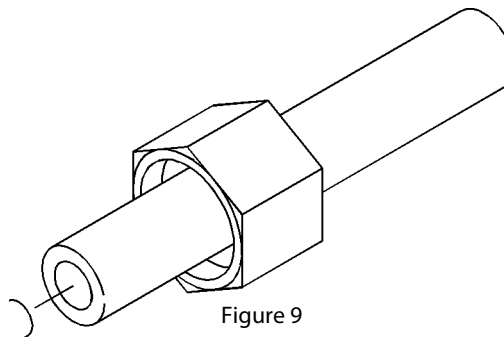
For installations in Massachusetts, Massachusetts Plumbing Code 248 CMR shall be adhered to. Consult your licensed plumber for installation of this system. This system and its installation must comply with state and local regulations. The use of saddle valves is not permitted.

Height of Discharge Above Floor Level Operating - Table 3

Operating Pressure	0 ft. (0 m)	2 ft. (0.6 m)	4 ft. (1.2 m)	6 ft. (1.8 m)	8 ft. (2.4 m)	10 ft. (3 m)
30 psi (210 kPa)	60 ft. (18 m)	50 ft. (15 m)	30 ft. (9 m)	15 ft. (5 m)	Not allowable	Not allowable
40 psi (279 kPa)	100 ft. (30 m)	90 ft. (27 m)	70 ft. (21 m)	50 ft. (15 m)	30 ft. (9 m)	12 ft. (4 m)
50 psi (349 kPa)	145 ft. (41 m)	115 ft. (35 m)	80 ft. (24 m)	80 ft. (24 m)	60 ft. (18 m)	40 ft. (12 m)
60 psi (419 kPa)			100 ft. (30 m)	100 ft. (30 m)	85 ft. (26 m)	60 ft. (18 m)
80 psi (559 kPa)					140 ft. (43 m)	120 ft. (37 m)
100 psi (699 kPa)	Normal installation should not require more than 100 ft. (30 m) of drain line					150 ft. (46 m)

Connect the Brine Line

- Measure a length of brine line sufficient to reach from the brine tank to the brine fitting, with no sharp bends. For easier access to the float it is recommended to add an extra four feet (1.3 meters) of length to the brine line. Cut both ends of the brine line squarely and cleanly.
- Slip the white nut over one end of the tubing and press the plastic insert into the end of the tubing (Figure 9). Connect to the brine valve and tighten nut.
- Remove white nut and plastic insert from the small parts pack.
- Slip the white nut over one end of the tubing and press the plastic insert into the end of the tubing (Figure 9). Connect to the brine connection on the valve and tighten nut.





Fill the Salt Storage Container

Fill the salt storage container with water until the level reaches about 1 inch above the salt support plate. Pour salt into the container. Fill with salt to within a few inches of the top.

Brine Valve "A" Dimension

The Culligan Gold Series™ unit contains a brine float which can serve as a backup refill shutoff in the event of a failure, such as a power outage when in the refill position. The float level should be set based on the salt dosage setting. Refer to Figure 10.

- Lift the brine valve from the brine chamber.
- Find the correct "A" dimension.
- Set the distance from the top of the filter screen to the base of the float accordingly. The slight difference in height when the float is pulled up or down is negligible.

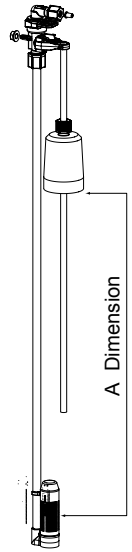


Figure 10

Aqua-Sensor® Probe and Soft-Minder® Meter Connection

To connect the probe or meter leads refer to Figure 11 and proceed as follows:

- Remove the timer case from the back plate.
- Snap the circuit board holding plate off the back plate to provide access to the back of the circuit board.
- Remove the plastic plug from the backplate.
- Slip the sensor probe lead or meter cable through the hole and toward the circuit board.

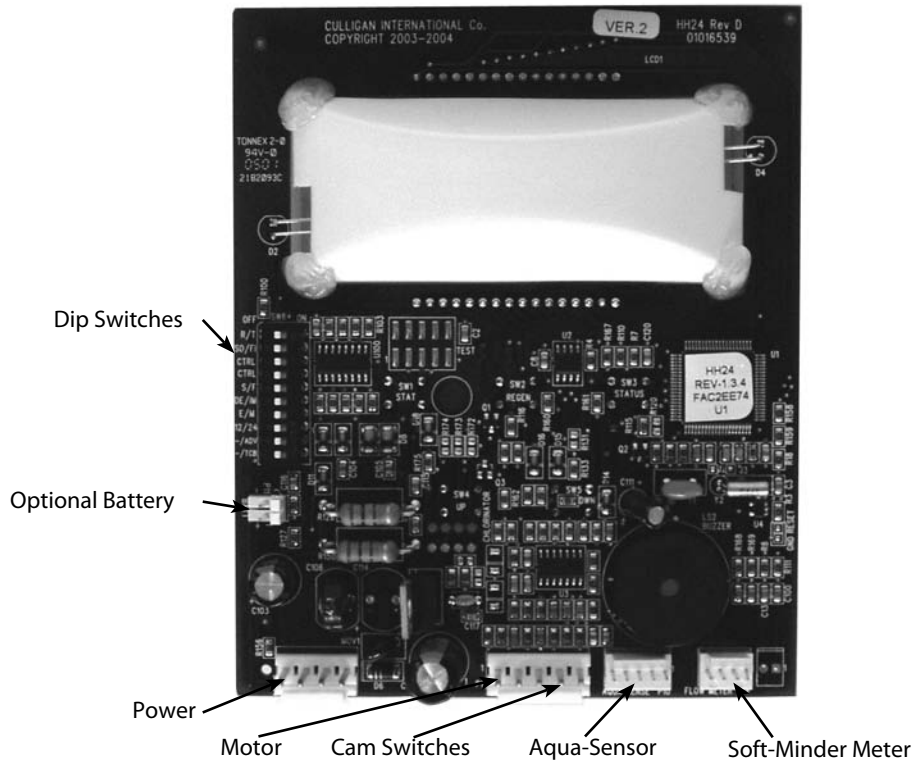


Figure 11



- Connect the lead to the circuit board. The Aqua-Sensor probe terminal is labeled “Aqua-Sensor”

Note: The strain relief located on the back of the wire connection for the Aqua-Sensor® probe may have to be removed in order to fit it through the backplate. Replace the strain relief if you need to remove it for assembly.

while the Soft-Minder meter terminal is labeled “Flow Meter”.

- Pull any excess cable wire back out of the enclosure, and route the wiring inside the enclosure to avoid any interference with moving parts.
- Locate the strain relief bushing in the parts pack. Place it on the cable at the point of entry to the rear of the timer plate and push it into the hole.

Note: The wire connectors must be connected to the circuit board properly. The wires must exit the plug-in connector opposite of the raised white base of the circuit board connector. Failure to properly connect any of the connectors will result in a malfunction of the circuit board operation.

Electrical Connection

The power cord needs to be connected to the plug-in transformer. Figure 19 shows the cord attachment to the transformer for non Aqua-Sensor models.

Note: Observe all state and local electrical codes.

The Aqua-Sensor probe (Figure 12) requires a 2.5 VAC power source. This source is provided via two of the posts on the 24V/2.5V transformer. Two leads from the transformer must be wired to the 2.5 VAC terminal on the circuit board. The wire connector from the Aqua-Sensor probe is simply plugged in the circuit board (Figure 13).



Caution! Failure to connect power to the correct terminals will damage the circuit board!

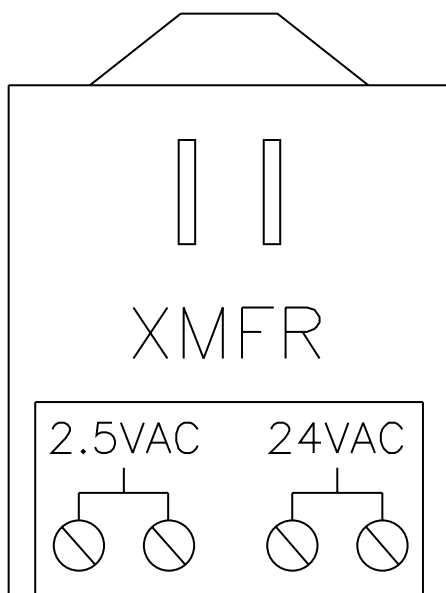


Figure 12

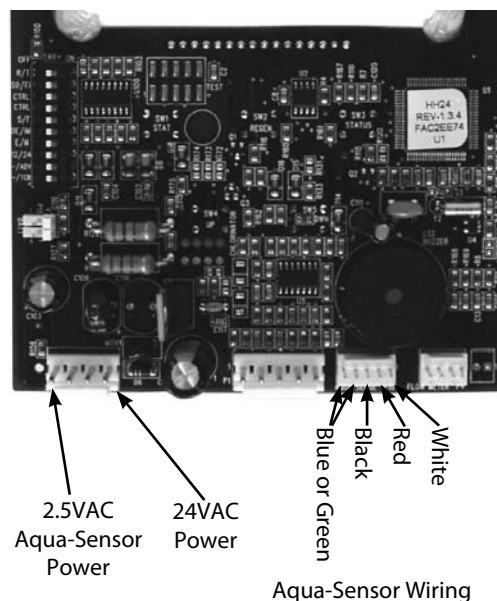


Figure 13



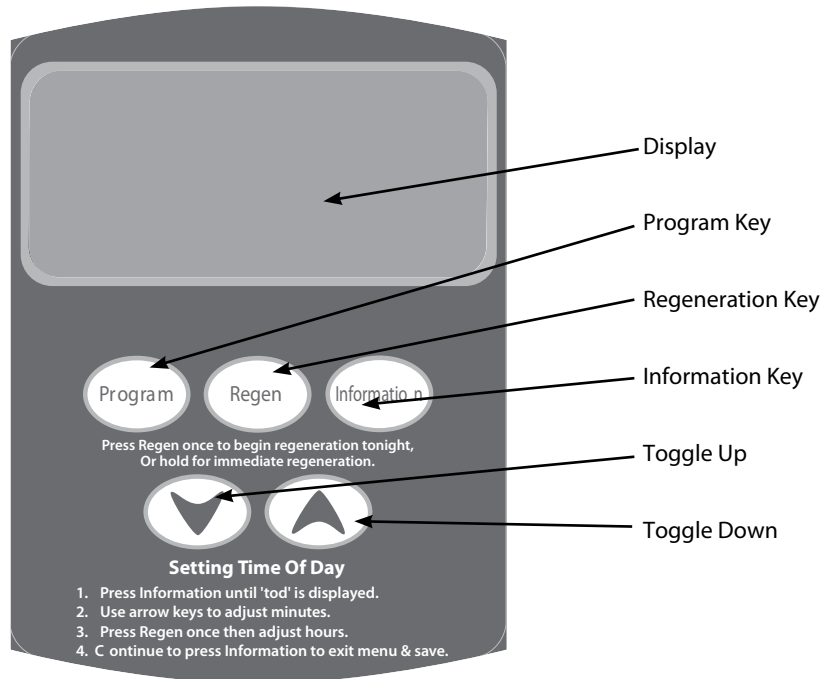
Programming

Power Loss

The AccuSoft® circuit board is equipped with a Hi-Cap Capacitor and EEPROM memory chip. The capacitor is capable of maintaining the time, for at least one day, in the event of a power outage. The EEPROM ensures that the individual programming parameters of your softener are not lost.

If the power outage lasts long enough to drain the Hi-Cap Capacitor, the control will flash "12:00 PM" when power is returned to the control. The unit will continue to keep time from the moment power is restored, and will initiate a full regeneration at the preset regeneration time. The time of day will need to be reset in order to return the regeneration to its preset time.

If you live in an area where power outages occur with a regular frequency, a battery backup option is available for ensuring that the time of day is properly maintained. Contact your Culligan Dealer for more information.



Display	Back lit LCD display.
Program Key	Depress to enter and move through the programming steps.
Regeneration Key	Press and hold the key for three (3) seconds to initiate an immediate regeneration. When pressed during programming the time of day, this key will allow the user to toggle between the hours and minutes setting of timing program segments.
Information Key	Each time depressed, the Information key will display statistical information such a flow rate, time of day. Use with the Toggle Down key to display other statistical information.
Toggle Down Key	In the programming mode this key will move the user through the programming function in a descending mode. If depressed for greater than three seconds, the rate at which the display scrolls through data will increase.
Toggle Up Key	In the programming mode this key will move the user through the programming function in an ascending mode. If depressed for greater than three seconds, the rate at which the display scrolls through the data will increase. This key will also allow the user to manually step through the cycles of regeneration.



Programming Culligan Gold Series Softener

The Culligan® AccuSoft® Plus circuit board controls all the softener functions. These settings are programmed at the time of installation. The following is a list of all the microprocessor functions in the event that any of the settings need to be adjusted.

A further description of each programming setting and the corresponding display is outlined below. For a display that has an icon that is displayed solid for the 2 second time period prior to bringing up the settings, the settings menu can be reached prior to the two second time out by pressing the "Up" or "Down" key.

- **Beeper Setting** - This setting is used to turn the beeper on or off for each key press actuation. The display will show "bEEP X" where X is either "Y" or "N". The "Y" or "N" will be toggled with the "Up" and "Down" keys. Setting the Beep option to "N" will only disable the beeper for key press actuation. The beeper will still be active for error and alarm codes.

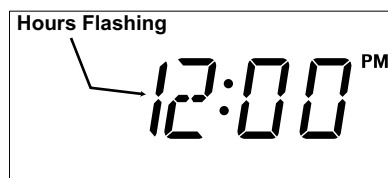
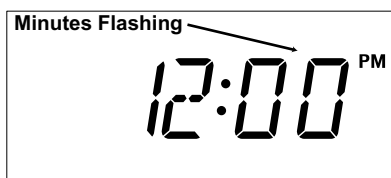


Pressing the "Program" key will save the setting and move to the next programming step.

- **Time of Day** - This setting is used to program the current time of day. When in this step the display will first show "tod" for two seconds. After "tod" is displayed, "12:00 PM" will display (or the current set time if already programmed) and the minutes will flash. The minutes are adjusted with the "Up" or "Down" key until the correct value is displayed.



Press the "Regen" key to flash the hours. Adjust with the "Up" or "Down" key until the correct time is displayed.



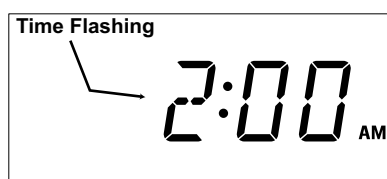
Pressing the "Program" key will save setting and move to the next programming step. Pressing "Regen" will move back to the minutes adjust.

- **Time of Regeneration** - This setting is used to program the time at which a regeneration is to occur in the delay mode, or in immediate mode with time clock backup on. The display will first show "tor" for two seconds.



After "tor" is shown the display will then show the default of 2:00 AM (or the current programmed time of regeneration if already set). The time can be adjusted in 30 minute increments by pressing the "Up" or "Down" keys.

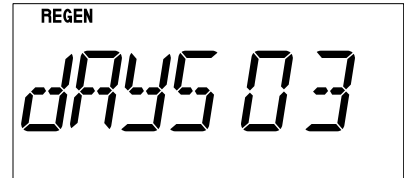
Pressing the "Program" key will save the setting and move to the next programming step.





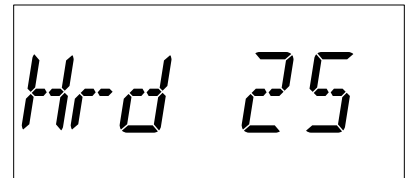
- **Regeneration Interval** - This setting is used to set the days between regeneration in time clock mode. It is also active in meter or Aqua-Sensor® mode if the time clock backup DIP switch # 10 is set to on. The display will show “REGEN” icon and “dAYS” as well as the numbers to change. Adjust the value with the “Up” or “Down” keys.

Pressing the “Program” key will save the setting and move to the next programming step.



- **Hardness Setting** - This setting is used to set the hardness (grains) of the influent water supply. For English Units the display will first show “Hard” for two seconds and then display the Hardness default (or the previously programmed value). Adjust the value with the “Up” or “Down” keys.

(These settings will not get saved to EEPROM until the ‘Program’ key is pressed while at the ‘View’ programming step)



- **Iron Setting (flow meter only)** - This setting is used to set the iron level of the influent water supply. The display will show “Iron” in the left most digits and the iron default setting (or the previously programmed value) in the far right digit. The display will only appear if a flow meter is connected to the circuit board and the control is set to Gold. If the iron level is set to “Y”, the Efficiency Mode is inactive. Adjust the value with the “Up” or “Down” keys.

Pressing the “Program” key will temporarily store the setting and move to the next programming step. (This setting will not get saved to EEPROM until the ‘Program’ key is pressed while at the ‘View’ programming step)

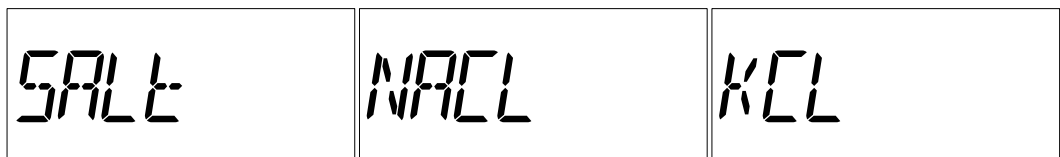


- **Pressure Setting** - This setting is used to set the influent water pressure. The display will show “LowP” in the left most digits and the pressure default setting in the far right digit. If the pressure is less than 40 psi, chose “Y”. By choosing “Y” the brine rinse time will be extended. Adjust the value with the “Up” or “Down” keys.

Pressing the “Program” key will temporarily store the setting and move to the next programming step.



- **Salt Type (flow meter only)** - This setting is used to select the regeneration salt type (softener mode only). This display will only appear if dips# 3 & 4 are set to Gold, Platinum, or Other. The display will show “SALT” for 2 seconds. Then display the default ‘NACL’. Pushing the “Up” or “Down” keys will change to ‘KCL’.



Pressing the “Program” key will temporarily store the setting and move to the next programming step. (This setting will not get saved to EEPROM until the ‘program’ key is pressed while at the ‘View’ programming step)

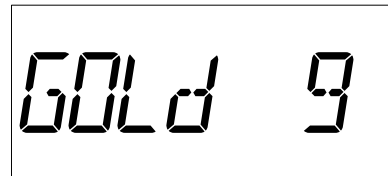


- Efficiency Mode (flow meter only) - Efficiency mode will only be active if the conditions as explained earlier are met (Not available if DIP switch #6 or DIP switch #9 are on). The "EFFICIENCY MODE" Icon will be displayed with a default of "YES". Toggle between "YES" and "NO" with the "Up" or "Down" key.



Pressing the "Program" key will temporarily store the setting and move to the next programming step. (This setting will not get saved to EEPROM until the 'program' key is pressed while at the 'View' programming step).

- Gold Tank Sizes (Meter / AS / TC) - This setting is used to determine what size tank the control is connected to. It will only appear if DIP Switch 3 is set to Gold. The display will first show "GOLD" with the tank size default (or the previously programmed value). Adjust the tank size with the "Up" or "Down" keys.



Pressing the "Program" key will temporarily store the setting and move to the next programming step. (This setting will not get saved to EEPROM until the 'Program' key is pressed while at the 'View' programming step)

- View - This setting is used to allow the programmer to view the calculated values for salt dosage, cycle times, batch capacity, and total capacity. These values may be changed at this time. The display will show "VIEW N". The "Y" or "N" will be toggled with the "Up" and "Down" keys. The default for this item shall always be "N" and does not get saved in EEPROM. The programmer must always toggle to "Y" in order to view these items. Pressing the "Information" key at this menu will re-calculate outputs based on saved inputs.



dosAGE	BACKWASH	10 ^{MIN}	BRINE RANGE	60 ^{MIN}	FAST RANGE/REFILL	10 ^{MIN}	MAX CAP	BATCH	SAVE N
Lb5 7							9999 99	000870	

If "VIEW Y" is chosen, then pressing the "Program" key will display the value for salt dosage; repeated presses of the program key will display cycle times, batch capacity, and total capacity.

Pressing the "Program" key after viewing "Batch" will exit the programming menu..

If "VIEW N" is chosen, then pressing the "Program" key will exit the programming menu. If any values were changed from calculated values, then "SAVE" prompt appears. If "SAVE N" is chosen, the calculated values go back in. The user must choose "SAVE Y" to save custom values.



- Salt Dosage - This setting is used to set the salt dosage. It will only be accessible to be set if dips # 3 & 4 are set to Gold and 'View' was set to 'Yes'. The display will first show "DOSAGE" for two seconds and then display the default (or previously programmed value). The proper units (lbs or kg) will appear according to dip # 7 setting (English/Metric). Adjust the salt dosage with the "Up" or "Down" keys.



Note: This setting also appears during Aqua-Sensor® Programming.

Pressing the "Program" key will save the setting and move to the next programming step.

- Cycle 1 Time - This setting is used to program the cycle 1 time that is usually backwash. The time of the cycle is kept in minutes. The display will show the "BACKWASH" and "MINS" icons and the cycle time in the right most digits. Adjust the value with the "Up" or "Down" keys.



Note: This setting also appears during Aqua-Sensor Programming.

Pressing the "Program" key will save the setting and move to the next programming step.

- Cycle 2 Time - This setting is used to set the time in minutes for cycle 2. This cycle is brine draw / slow rinse for softeners. The display will show the "BRINE RINSE" and "MINS" icons and the cycle time in the right most digits. Adjust the value with the "Up" or "Down" keys.



Note: This setting also appears during Aqua-Sensor Programming.

Pressing the "Program" key will save the setting and move to the next programming step.

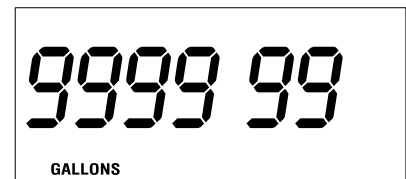
- Cycle 3 Time - This cycle is the Fast Rinse/Refill for softeners. The display will show the "Fast Rinse/Refill" and "Mins" icons and the cycle time in the far right digits.

Note: This setting CAN NOT be adjusted!



Pressing the "Program" key will move to the next programming step.

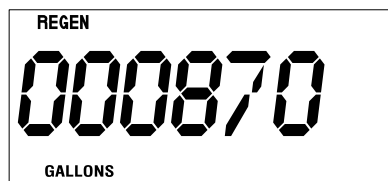
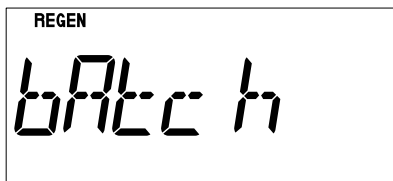
- Total Capacity Set Point (Max Capacity) - This setting is used to program a value that corresponds to the maximum capacity that can be expected from a unit before it is completely exhausted. If the unit reaches this set point an immediate regeneration will occur. This setting will only appear if a flow meter is connected to the circuit board. Adjust the value with the "Up" or "Down" keys. The display will show the "REGEN" icon and "MAXCAP" for two seconds and then display the "REGEN" and "GALLONS" or "LITERS" (depending on DIP switch # 7 setting) icons and the setting numbers to adjust.



Pressing the "Program" key will save the setting and move to the next programming step.



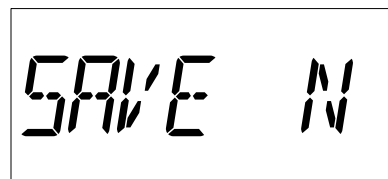
- **Batch Set Point** - This setting is used to set the trip point for regeneration when in flow meter operation. It will only appear if a flow meter is connected. The programmed setting displays the actual set point to trigger regeneration. The display will show the "REGEN" icon and "bAtch" for two seconds and then display the "REGEN" and "GALLONS" or "LITERS" (depending on dip # 7 setting) icons and the setting numbers to adjust. Adjust the value with the "Up" or "Down" keys.



Pressing the "Program" key will save the setting and exit the programming menu.

- **Save** - This setting is used to save customized outputs. Selecting "Y" saves customized settings; selecting "N" recalculates outputs based on current inputs (This option does not appear if outputs are unchanged.).

Pressing the "Program" key will move to the next programming step.





Statistic Functions

The statistical functions are reached by pressing the "Information" key. Repetitive presses of the "Statistics" key will cycle through the standard statistics mode until cycled back to time of day display.

Once either of the Information menus is entered the information shown for each display is outlined below.

- Aqua Sensor - This display will only show when in aqua sensor mode (no meter attached). The display will alternate between 'aqua' and 'sensor' every second until the 'Information' key is pressed or until the function times out.
- Flow Rate - This display will only show if the flow meter is attached to the control. The display shall show the current flow rate of the water passing through the control. The display will show the "FLOW RATE" and "GPM" icons and the current flow rate passing through the flow meter for as long as the "-" key or "Information" key is not pressed.

This display shall never time out, as opposed to the rest of standard statistics (10 minutes).

- Capacity Remaining (%)(standard statistics) - This display will only show if the flow meter is attached to the control. The display shows the percent capacity remaining before regeneration will be triggered. The display will show the "SOFTWATER", "REMAINING" and "%" icons. This display shall never time out, as opposed to the rest of standard statistics (10 minutes).

- Today's Water Usage - This display will only show if the flow meter is attached to the control. The display will show the accumulated flow of water for the current day. The value is to start totalizing at 12:00 AM and reset to 0 at 11:59:59 PM. The display will show the "TODAY'S", "WATER USAGE" and "GALLONS" icons and the total days flow.

- Average Daily Water Usage - This display will only show if the flow meter is attached to the control. The display will show a running 7-day average of daily water usage. The display will show the "AVG DAILY", "WATER USAGE" and "GALLONS" icons and the averaged flow value.

AQUA

SENSOR

005.6
FLOW RATE GPM

SOFT WATER
REMAINING
047 %

TODAY'S
WATER USAGE
187
GALLONS

AVG DAILY
WATER USAGE
02 13
GALLONS



Regeneration

There are several conditions that will cause the control to trip a regeneration. The "REGEN" enunciator will light when the control has signaled for a regeneration. The "REGEN" enunciator will flash while the control is in regeneration. The following are conditions that will call for regeneration:

- 1 When the Soft-Minder® meter has recorded the passage of a predetermined number of gallons.
- 2 When the Aqua-Sensor® Probe senses the hardness in the Cullex Media.
- 3 At the preset time, when the number of days without a regeneration is equal to the Timeclock Backup setting.
- 4 At the preset time, when the "REGEN" button is depressed once. "REGEN" will light.
- 5 Immediately, when the "REGEN" button is depressed for three seconds. "REGEN" will light and blink.
- 6 Immediately, if power to the unit has been off for more than 3 hours and time of day has been restored.

Final Start-Up



Recommended Meter Start-Up Procedure

- Close the main water supply valve.
- Set the Cul-Flo-Valv® to the bypass position.
- Ensure that all faucets at the installation site are closed.
- Direct the drain line discharge into a bucket where flow can be observed.
- Plug the transformer into a 120 Volt, 60 Hz, single-phase receptacle.
- Wait for the control to energize the motor and home itself.
- Set the timer to the correct time of day.
- Open the main supply valve.
- Initiate an immediate regeneration to move the control into the backwash position.
- Refer to the section on manual cycling for information on cycling the control through its positions.
- When in the backwash position, slowly shift the bypass to the soft water position until water flows.
- Allow the tank to fill slowly until water flows from the drain line.
- When flow to drain is established, open the bypass fully. Watch the drain line discharge for signs of resin. If signs of resin particles appear, reduce the flow. Increase the flow again when resin no longer appears in the discharge.
- When the unit is filled with water, return the timer to the service position and proceed with setting the microprocessor. Refer to the programming section.
- Sanitize the unit as you leave the installation site (See Sanitizing Procedure).
- Initiate a regeneration and allow the regeneration to run to completion.

Note: Unplugging the Culligan Gold Series water softener will not affect any of the control settings (The control must be plugged in for at least 10 minutes.). Once programmed in, the settings will be stored indefinitely. In the event of a power failure the time-of-day setting will be stored for 12 hours maximum. If longer time storage is necessary, a battery backup is available.



Recommended Aqua-Sensor® Start-Up Procedure

- Close the main water supply valve.
- Install the sensor probe into the tank but do not connect the sensor to the control at this time.
- Set the Cul-Flo-Valv® to the bypass position.
- Ensure that all faucets at the installation site are closed.
- Direct the drain line discharge into a bucket where flow can be observed.
- Plug the transformer into a 120 Volt, 60 Hz, single-phase receptacle.
- Wait for the control to energize the motor and home itself.
- Open the main supply valve.
- Initiate an immediate regeneration to move the control into the backwash position.
- Refer to the section on manual cycling for information on cycling the control through its positions.
- When in the backwash position, slowly shift the bypass to the soft water position until water flows.
- Continue backwash until the drain effluent is clear – at least 10 minutes (use a white foam coffee cup to occasionally collect a sample of backwash water; the stark white of the cup will show the presence of color throw and resin fines).
- After the backwash water runs clear, step the control to the Fast Rinse/Refill position to fill the brine tank and purge air from the brine line.
- Continue or repeat the backwash cycle if needed (while in the backwash step, you can pull the plug on the control and allow it to run as long as needed).
- Unplug the control and connect the sensor to the circuit board.
- Reconnect the power; the control will home again.
- To check the condition of the sensor, press the Information key, followed by the up key (the screen at right appears, HM alternating with the time remaining in the sensor lockout period – should be 00); with a sensor connected the A enunciator should appear in the second digit from the left.
- Press the Information key and program the control to the desired settings.
- Complete installation and cleanup.
- Sanitize the unit as you leave the installation (see sanitizing procedure).
- Initiate a regeneration and allow the regeneration to run to completion.

The thorough backwashing process should have cleared the fines and color-throw from the tank. The probe should settle into the resin bed during the first couple of minutes of backwashing.



Salt Supply, Usage and Service

Salt is the mineral used to “recharge” your water conditioner. A brine solution is automatically made up in the bottom of the salt storage container, the Cullex® resin beads in the mineral tank are flushed with the brine solution as a step in the recharging process.

Your Culligan Water Conditioner has been carefully designed to get the greatest amount of softening capacity from the salt it uses. Here is some pertinent information about salt usage, types and service.

Salt Economizer

This control is set at the time of installation, and determines salt usage according to the water hardness, number of persons in the household, and water usage.

What Kind of Salt is Best

All Culligan Water Conditioners are designed to use any water conditioner salt of good quality, including “rock”, “pellet”, “solar”, or “evaporated” types.

All rock salt, regardless of source, contains insoluble material which collects at the bottom of the salt storage tank and requires periodic clean-out.

If purified salt products are used, the salt storage compartment will require less frequent clean-out, but you must check more frequently for “bridging”.

Regardless of what type of salt is used, we recommend Culligan Brand Salt as suggested by your Culligan Dealer. He or she is the expert and can provide you with the best product for your Culligan Water Conditioner.

Automatic Salt Delivery Service

Ask your Culligan Dealer for details about salt delivery service. You can have your salt supply replenished on a regular basis. Whether you have automatic delivery service or pick up salt from your Culligan Dealer, you will be getting quality salt packaged according to rigid Culligan specifications. Using Culligan Brand Salt will help assure continued efficiency and trouble-free operation of your water conditioner.

Sodium Information: “Water softeners using sodium chloride for regeneration add sodium to the water. Persons who are on sodium restricted diets should consider the added sodium as part of their overall sodium intake.”



Following these simple precautions will help assure continued trouble-free service and keep your Culligan Water Conditioner looking like new for years.

1. Do not place heavy objects on top of the salt storage tank or timer cover.
2. Use only mild soap and warm water when cleaning the exterior of the conditioner. Never use harsh, abrasive cleaning compounds or those which contain acid, such as vinegar, bleach and similar products.
3. Important: Protect your water conditioner and the entire drainline from freezing temperatures. DANGER: If your unit should freeze, do not attempt to disassemble it. Call your Culligan Dealer.
4. Important: Culligan water softeners are sold for use on potable water, only. If at any time the water becomes contaminated, such as during a "boil water" situation, the operation of the water softener should be discontinued until it is verified that the water is again potable. To do this, turn the blue knob clockwise. Then, call your Culligan dealer to have your system sanitized before it is placed back into service.
5. Should service, adjustment or trouble-shooting information be needed which is not covered in the Use and Care Guide, call your Culligan Dealer.

If you have further questions, please call your local independently operated Culligan dealer. He or she will be glad to be of assistance to you. For your nearest Culligan dealer, call (800) 285-5442.

Recommended Preventative Maintenance Inspection Schedule

The Culligan Gold Series household water softener has been designed to provide a good, consistent service life. Routinely inspecting the system may help avoid potentially costly breakdowns related to circumstances outside of the control of the dealer and/or user.

Component	Suggested Inspection Frequency	Reason for Maintenance
Entire System	At Start-up, after infrequent use (idle for one week or more) or every 3 - 6 months.	On private supplies, the appearance of off-tastes and odors, particularly if musty or "rotten egg" (caused by harmless sulfate-reducing bacteria) may indicate a need for the system to be sanitized. See page 40.
Backwash Flow Controller	Every 12 months or every time service is performed on the system.	Build up of sediment, iron and/or other foreign materials (found in some water supplies but not necessarily all) could negatively affect system performance. Monitor item for normal or unexpected wear.
Brine eductor nozzle and throat	Every 12 months or every time service is performed on the system.	Build up of sediment, iron and/or other foreign materials (found in some water supplies but not necessarily all) could negatively affect system performance. Monitor item for normal or unexpected wear.
Softening Media (Cullex)	Every 2 -3 years	Chlorinated water supplies can breakdown and destroy resin material. Resin material may also perform poorly if subjected to other materials (sediment, iron, alum, etc.) found in some water supplies (but not necessarily all).

Care and Cleaning of your Water Conditioner



To Clean Out the Salt Storage Tank

A periodic clean-out of the Salt Storage Tank is necessary to keep your Culligan Water Conditioner at peak operating efficiency. Do it at least every 2 years when the salt supply is low. Follow these step-by-step procedures:

Tools needed:

- Scoop
- Clean, bucket-size container
- Phillips-head screwdriver
- Garden hose
- Household scrub brush or sponge

1. Remove the salt storage tank cover and the cap from the brine valve chamber.
2. Lift the brine valve out of the brine valve chamber and set aside in an upright position.
3. If you'd like to save any clean, dry salt remaining in the tank, remove it and place it in a clean container.
4. Using the scoop, dig out and discard as much remaining salt, water and debris as possible.
5. Remove the brine valve chamber by removing the screws on either side of the salt tank.
6. Remove the salt plate at the bottom of the brine tank.
7. Lay the salt tank on its side and direct a brisk stream of water from your garden hose to its inside to rinse out all residue.
8. Using a household scrub brush and a mild soapy solution, clean the salt plate. This will complete the tank cleaning.
9. Stand salt tank upright. Replace the salt plate. Place brine valve chamber in position and affix with screws.
10. Insert the brine valve into the chamber and replace brine valve chamber cap.
11. Fill the salt storage tank with 4 to 6 inches of water.
12. Fill the tank with salt to within a few inches of the top.
13. Replace salt storage tank cover.



Sanitizing Procedure

A water softener in daily use on a potable water supply generally requires no special attention other than keeping the salt tank filled. Occasionally, however, a unit may require sanitization under one of the following conditions:

- At start-up time.
- After standing idle for a week or more.
- On private supplies, the appearance of off-tastes and odors, particularly if musty or “rotten egg” (caused by harmless sulfate-reducing bacteria).

Note: If the water supply contains iron, regenerate the softener before sanitizing to remove iron from the resin.



Caution! Hazard from toxic fumes! Chlorine bleach and common iron control chemicals may generate toxic fumes when mixed.

- If the unit uses Culligan Sofner-gard® or other compounds containing sodium hydrosulfite, sodium bisulfite, or any other reducing agent, disconnect the device feeding the chemical(s) and manually regenerate the unit before sanitizing.
- Do not use this procedure if the softener salt contains iron control additives.

1. Remove the brine tank cover.
2. Pour directly into the brine chamber 1/3 to 1/2 cup of common household bleach (5.25% sodium hypochlorite) for each cubic foot of resin in the tank.
3. Manually start recharge. Allow the unit to complete the recharge cycle automatically.

If tastes and odors return frequently, even after sanitization, a continuous chlorination system may be needed. Send a water sample to a qualified laboratory for bacterial analysis.



Things to Check Before Calling for Service

If you unexpectedly experience hard water, make these simple checks before calling your Culligan dealer. One of the following conditions may be the reason for your interruption of service.

Important

If any of the following conditions is found, the water conditioner should be manually recharged according to instructions on page 28 after you have corrected the problem.

Power Supply

Check your power supply cord. Is it plugged fully into the electric outlet? Be certain that the outlet is not controlled by a wall switch which has been turned off. Reset conditioner to proper time of day and then plug in.

Blown Fuse

Check the house fuse or circuit breaker panel. Replace a blown-out fuse or reset an open circuit breaker.

Power Failure

Any interruption in your power supply or time changes - such as daylight savings - will disrupt your conditioner's recharge schedule by causing the timer to run off-schedule. Reset timer to proper time of day.

Bypass Valves

Check to see if they are in the proper position. Cul-Flo-Valv[®] Bypass, if used, should be in the "Push service" position (see page 42). If hand valves are used, see that inlet and outlet valve are opened and that the bypass valve is closed.

No Water

If you aren't getting any water flow at all, make sure your water supply is working. Open a tap ahead of the conditioner (outside tap) to see if you have any water pressure. If you have water pressure, check the bypass valve. If it is in the Service position, put it into the bypass and call your Culligan dealer for service.

Increased Usage

Guests, family additions, new water-using appliances, etc., all will result in more water usage and will require more capacity from your conditioner. You can reprogram your recharging schedule by following the directions on pages 22-26. Call your Culligan dealer for advice and save a service call.

Salt Supply

Check it. Refill if necessary and wait approximately 4 hours for salt to dissolve before initiating a recharge cycle.

Salt Bridging

Salt bridging occurs when a space is formed between the salt and the water underneath, preventing the salt from dissolving to make brine. No brine, no soft conditioned water!

High humidity and/or use of some brands of purified salt products may cause a salt bridge to form.

The best way to check and eliminate a salt bridging problem is to take a broom handle or similar instrument and make a mark 34 inches from the end. Then carefully begin to probe down through the salt with the instrument. Should an obstruction be found before the mark on your instrument reaches the rim of the salt storage tank, a salt bridge is likely to have formed. Continue to probe and break the salt bridge completely.



Error Codes

The Accusoft Plus microprocessor is equipped with an advanced error detection system. During all operating modes the softener's electronics are performing self-diagnostics to ensure that the unit is operating correctly. There may be times, however, when something may occur that could cause the unit to improperly operate. In those instances the microprocessor will identify the exact problem and alert the user with an error code. Shown below is a description of the error codes.

Display	Alert Code Description	Mode of Detection	Comments
ERR 1	Motor Failure to Start	If the valve fails to reach the desired state within 70 seconds of driving the motor. The control will attempt to start the motor 3 times for 70 seconds each time with a 60 second off period between each attempt.	Press and hold 'Program' key for 10 seconds.
ERR 2	Motor Failure to Stop	If the control detects changes in the Cam inputs when the motor is not supposed to be turning.	Press and hold 'Program' key for 10 seconds.
ERR 3	Incorrect Cycle Position	The control expects to be in a different position than that indicated by the Cam switch closures.	Press and hold 'Program' key for 10 seconds.
ERR 4	Control type does not match.	-If dips# 3 & 4 are set for 'Gold' and 4-cycle valve is detected. -If dips# 3 & 4 are set for 'Gold' or 'Europe' and 5-cycle valve is detected.	Press and hold 'Program' key for 10 seconds.
CHECK SALT	A/S mode; control detected no brine during brine rinse cycle.	A very distinct signal is expected from the probe during brine rinse; lack of this signal means no brine was detected.	Once this alert is triggered, the A/S is no longer a valid regen trigger. The alert can only be cleared after a successful regeneration of the resin bed.

Beeping only occurs between the hours of 8:00 am and 8:00 pm. Beeping can be silenced by pressing any key.

To reset an error, press and hold for 10 seconds the 'Program' button. The unit will beep and check to see if indeed the error has been fixed. If the error was not fixed, the board will re-display the error code. If the error code does not reset please contact your local Culligan Dealer. For additional troubleshooting or service needs, please contact your local Culligan Dealer.



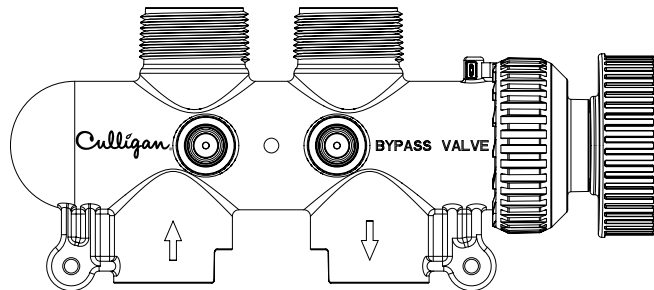
When and How to Bypass Your Water Conditioner

Normally, all water except outside lines passes through the water conditioner. There are times when the water conditioner should be bypassed, using the Cul-Flo-Valv[®] Bypass, or a 3-way bypass valve. You should bypass:

1. If lines to outside faucets do not bypass the water conditioner, and you do not want to waste soft water on lawn sprinkling or other outside uses.
2. If you are going away on vacation and want to save salt by not having the unit recharge while you're away.

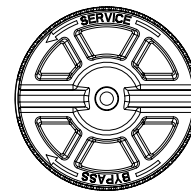
Bypass Valve

In the back of Culligan water conditioners is a push-button Cul-Flo-Valv[®] Bypass. To bypass unit, simply turn the blue knob clockwise. To return to soft water service, reverse the procedure - turn the blue knob counter-clockwise.

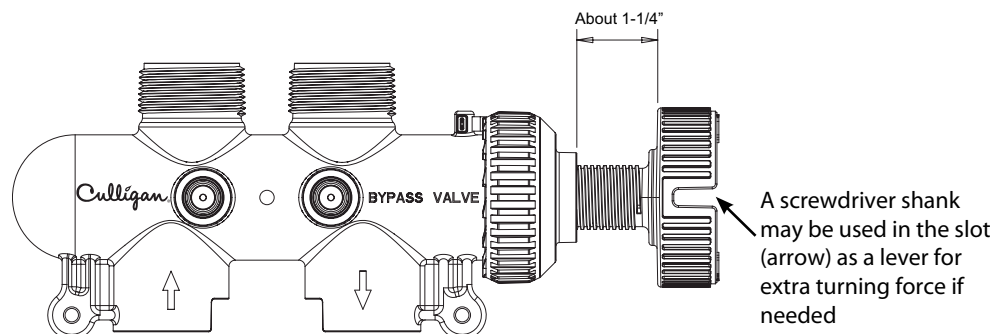


To BYPASS, turn the blue knob clockwise (see directional arrow on end of knob) until the knob stops as shown.

DO NOT OVERTIGHTEN!



Bypassed – Figure 14a



To return to SERVICE, turn the blue knob counter-clockwise (see directional arrow on end of knob) until the knob stops as shown.

DO NOT OVERTIGHTEN!

Soft Water – Figure 14b



Culligan knows the more informed you are about your water treatment systems, the more confident you will be about its performance. It's because of this and more than seventy years of commitment to customer satisfaction that Culligan is providing this Performance Data Sheet to its customers.

Important Notice: Read this Performance Data Sheet and compare the capabilities of this unit with your actual water treatment needs. It is recommended that before purchasing a water treatment unit, you have your water supply tested to determine your actual water treatment needs.

Manufacturer: Culligan International Company
 9399 W. Higgins Rd., Suite 1100, Rosemont, IL 60018 USA
 (847) 430-2800

Product: Culligan Gold 9" Soft-Minder*



Testing Conditions & Results:

Flow Rate:	9.0 gpm @ 14 psi	Capacity:	19,086 grains @ 4.0 lb. salt
Pressure:	30 - 40 psi		26,301 grains @ 8.0 lb. salt
Acidity:	Non-Corrosive		30,787 grains @ 12.0 lb. salt
Temperature:	68° (20°C)	pH:	7.6
Efficiency Rated Dosage†:	4,770 gr/lb		

Softener Specifications:

Max. Flow Rate: 9.0 gpm (34 Lpm)	Pressure Drop at Max. Flow Rate: 14.0 psi (90 kPa)
Operating Temp. Range: 33-125°F (1-50°C)	Max. Drain Flow Rate: 1.6 gpm (6.1 Lpm)
Working Pressure Range: 20-120 psi (140-860 kPa)	Oper. Pressure Range (Canada): 20 - 90 psi (140 - 620 kPa)

Name of Substance	USEPA Maximum Contaminant Level	pH	Flow Rate	Pressure
Barium	2.0 mg/L	7.5 + 0.5	9.0 gpm	14 (psig)
Radium 226/228	5 pCi/L	7.5 + 0.5	9.0 gpm	14 (psig)

This system is certified for barium and radium 226/228 reduction based on hardness reduction. It is recommended you test your water every 6 months to ensure the system is performing properly and that hardness, and therefore barium and radium 226/228, are being reduced. Hardness test strips have been included. Additional strips are available from your local Culligan dealer.

The Culligan Gold Series 9" Water Softeners are tested and certified by WQA against NSF/ANSI 372, CSA B483.1, and NSF/ANSI Standard 44 for the effective reduction of hardness (calcium and magnesium) and barium/radium as verified and substantiated by test data.

The Culligan Gold Series 9" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 61 for material requirements.

An efficiency rated water softener is a DIR softener which also complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in its operation. Efficiency rated water softeners shall have a rated salt efficiency of not less than 3350 grains of total hardness exchange per pound of salt (based on NaCl equivalency) (477 grams of total hardness exchange per kilogram of salt), and shall not deliver more salt than its listed rating. The efficiency is measured by a laboratory test described in NSF/ANSI 44. The test represents the maximum possible efficiency the system can achieve. Operational efficiency is the actual efficiency achieved after the system has been installed. It is typically less than the efficiency due to individual application factors including water hardness, water usage, and other contaminants that reduce the softener's capacity.

Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan Man. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Culligan water softeners are designed to work with any salt of good quality, although it is recommended that you ask your local Culligan Man for his suggestion on the best type and grade of salt to use in this softener.

Notice: This softener is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

† The efficiency rated dosage is only valid at the 4lb. salt dosage for 9" models.

Buyer Signature _____ Date _____
 Seller Signature _____ Date _____

Performance Data Sheet

Culligan Gold 9" Soft-Minder*



Performance Data Sheet

Culligan Gold 9" Aqua-Sensor*

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Manufacturer: Culligan International Company
9399 W. Higgins Rd., Suite 1100, Rosemont, IL 60018 USA
(847) 430-2800

Product: Culligan Gold 9" Aqua-Sensor*

Testing Conditions & Results:

Flow Rate:	9.0 gpm @ 14 psi	Capacity:	19,086 grains @ 4.0 lb. salt
Pressure:	30 - 40 psi		26,301 grains @ 8.0 lb. salt
Acidity:	Non-Corrosive		30,787 grains @ 12.0 lb. salt
Temperature:	68° (20°C)	pH:	7.6
Efficiency Rated Dosage†:	4,770 gr/lb		

Softener Specifications:

Max. Flow Rate: 9.0 gpm (34 Lpm)	Pressure Drop at Max. Flow Rate: 14.0 psi (90 kPa)
Operating Temp. Range: 33-125°F (1-50°C)	Max. Drain Flow Rate: 1.6 gpm (6.1 Lpm)
Working Press. Range: 20-120 psi (140-860 kPa)	Oper. Press. Range (Canada): 20 - 90 psi (140 - 620 kPa)

Name of Substance	USEPA Maximum Contaminant Level	pH	Flow Rate	Pressure
Barium	2.0 mg/L	7.5 + 0.5	9.0 gpm	14 (psig)
Radium 226/228	5 pCi/L	7.5 + 0.5	9.0 gpm	14 (psig)

This system is certified for barium and radium 226/228 reduction based on hardness reduction. It is recommended you test your water every 6 months to ensure the system is performing properly and that hardness, and therefore barium and radium 226/228, are being reduced. Hardness test strips have been included. Additional strips are available from your local Culligan dealer.

The Culligan Gold Series 9" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 44 for the effective reduction of hardness (calcium and magnesium) and barium/radium as verified and substantiated by test data.

The Culligan Gold Series 9" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 61 for material requirements.

An efficiency rated water softener is a DIR softener which also complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in its operation. Efficiency rated water softeners shall have a rated salt efficiency of not less than 3350 grains of total hardness exchange per pound of salt (based on NaCl equivalency) (477 grams of total hardness exchange per kilogram of salt), and shall not deliver more salt than its listed rating. The efficiency is measured by a laboratory test described in NSF/ANSI 44. The test represents the maximum possible efficiency the system can achieve. Operational efficiency is the actual efficiency achieved after the system has been installed. It is typically less than the efficiency due to individual application factors including water hardness, water usage, and other contaminants that reduce the softener's capacity.

Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan Man. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Culligan water softeners are designed to work with any salt of good quality, although it is recommended that you ask your local Culligan Man for his suggestion on the best type and grade of salt to use in this softener.

Notice: This softener is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

† The efficiency rated dosage is only valid at the 4lb. salt dosage for 9" models.

Buyer Signature _____ Date _____

Seller Signature _____ Date _____



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Manufacturer: Culligan International Company
 9399 W. Higgins Rd., Suite 1100, Rosemont, IL 60018 USA
 (847) 430-2800

Product: Culligan Gold 10" Soft-Minder*



Testing Conditions & Results:

Flow Rate:	9.4 gpm @ 15 psi	Capacity:	28,629 grains @ 6.0 lb. salt
Pressure:	30 - 40 psi		39,451 grains @ 12.0 lb. salt
Acidity:	Non-Corrosive		46,180 grains @ 18.0 lb. salt
Temperature:	68° (20°C)	pH:	7.6
Efficiency Rated Dosage†:	4,770 gr/lb		

Softener Specifications:

Max. Flow Rate: 9.4 gpm (35.5 Lpm)	Pressure Drop at Max. Flow Rate: 15 psi (109 kPa)
Operating Temp. Range: 33-125°F (1-50°C)	Max. Drain Flow Rate: 1.6 gpm (6.1 Lpm)
Working Press. Range: 20-120 psi (140-860 kPa)	Oper. Pressure Range (Canada): 20 - 90 psi (140 - 620 kPa)

Name of Substance	USEPA Maximum Contaminant Level	pH	Flow Rate	Pressure
Barium	2.0 mg/L	7.5 + 0.5	9.4 gpm	15 (psig)
Radium 226/228	5 pCi/L	7.5 + 0.5	9.4 gpm	15 (psig)

This system is certified for barium and radium 226/228 reduction based on hardness reduction. It is recommended you test your water every 6 months to ensure the system is performing properly and that hardness, and therefore barium and radium 226/228, are being reduced. Hardness test strips have been included. Additional strips are available from your local Culligan dealer.

The Culligan Gold Series 10" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 44 for the effective reduction of hardness (calcium and magnesium) and barium/radium as verified and substantiated by test data.

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An efficiency rated water softener is a DIR softener which also complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in its operation. Efficiency rated water softeners shall have a rated salt efficiency of not less than 3350 grains of total hardness exchange per pound of salt (based on NaCl equivalency) (477 grams of total hardness exchange per kilogram of salt), and shall not deliver more salt than its listed rating. The efficiency is measured by a laboratory test described in NSF/ANSI 44. The test represents the maximum possible efficiency the system can achieve. Operational efficiency is the actual efficiency achieved after the system has been installed. It is typically less than the efficiency due to individual application factors including water hardness, water usage, and other contaminants that reduce the softener's capacity.

Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan Man. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Culligan water softeners are designed to work with any salt of good quality, although it is recommended that you ask your local Culligan Man for his suggestion on the best type and grade of salt to use in this softener.

Notice: This softener is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

† The efficiency rated dosage is only valid at the 6lb. salt dosage for 10" models.

Buyer Signature _____ Date _____
 Seller Signature _____ Date _____

Performance Data Sheet

Culligan Gold 10" Soft-Minder*



Performance Data Sheet

Culligan Gold 10" Aqua-Sensor*

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Important Notice: Read this Performance Data Sheet and compare the capabilities of this unit with your actual water treatment needs. It is recommended that before purchasing a water treatment unit, you have your water supply tested to determine your actual water treatment needs.

Manufacturer: Culligan International Company
9399 W. Higgins Rd., Suite 1100, Rosemont, IL 60018 USA
(847) 430-2800

Product: Culligan Gold 10" Aqua-Sensor*



Testing Conditions & Results:

Flow Rate:	9.4 gpm @ 15 psi	Capacity:	28,629 grains @ 6.0 lb. salt
Pressure:	30 - 40 psi		39,451 grains @ 12.0 lb. salt
Acidity:	Non-Corrosive		46,180 grains @ 18.0 lb. salt
Temperature:	68° (20°C)	pH:	7.6
Efficiency Rated Dosage†:	4,770 gr/lb		

Softener Specifications:

Max. Flow Rate: 9.4 gpm (35.5 Lpm)	Pressure Drop at Max. Flow Rate: 15 psi (109 kPa)
Operating Temp. Range: 33-125°F (1-50°C)	Max. Drain Flow Rate: 1.6 gpm (6.1 Lpm)
Working Press. Range: 20-120 psi (140-860 kPa)	Oper. Pressure Range (Canada): 20 - 90 psi (140 - 620 kPa)

Name of Substance	USEPA Maximum Contaminant Level	pH	Flow Rate	Pressure
Barium	2.0 mg/L	7.5 + 0.5	9.4 gpm	15 (psig)
Radium 226/228	5 pCi/L	7.5 + 0.5	9.4 gpm	15 (psig)

This system is certified for barium and radium 226/228 reduction based on hardness reduction. It is recommended you test your water every 6 months to ensure the system is performing properly and that hardness, and therefore barium and radium 226/228, are being reduced. Hardness test strips have been included. Additional strips are available from your local Culligan dealer.

The Culligan Gold Series 10" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 44 for the effective reduction of hardness (calcium and magnesium) and barium/radium as verified and substantiated by test data.

The Culligan Gold Series 10" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 61 for material requirements.

An efficiency rated water softener is a DIR softener which also complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in its operation. Efficiency rated water softeners shall have a rated salt efficiency of not less than 3350 grains of total hardness exchange per pound of salt (based on NaCl equivalency) (477 grams of total hardness exchange per kilogram of salt), and shall not deliver more salt than its listed rating. The efficiency is measured by a laboratory test described in NSF/ANSI 44. The test represents the maximum possible efficiency the system can achieve. Operational efficiency is the actual efficiency achieved after the system has been installed. It is typically less than the efficiency due to individual application factors including water hardness, water usage, and other contaminants that reduce the softener's capacity.

Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan Man. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Culligan water softeners are designed to work with any salt of good quality, although it is recommended that you ask your local Culligan Man for his suggestion on the best type and grade of salt to use in this softener.

Notice: This softener is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

† The efficiency rated dosage is only valid at the 6lb. salt dosage for 10" models.

Buyer Signature _____ Date _____
Seller Signature _____ Date _____



Performance Data Sheet

Culligan Gold 12" Soft-Minder®

Culligan knows the more informed you are about your water treatment systems, the more confident you will be about its performance. It's because of this and more than seventy years of commitment to customer satisfaction that Culligan is providing this Performance Data Sheet to its customers.

Important Notice: Read this Performance Data Sheet and compare the capabilities of this unit with your actual water treatment needs. It is recommended that before purchasing a water treatment unit, you have your water supply tested to determine your actual water treatment needs.

Manufacturer: Culligan International Company
9399 W. Higgins Rd., Suite 1100, Rosemont, IL 60018 USA
(847) 430-2800

Product: Culligan Gold 12" Soft-Minder®

Testing Conditions & Results:

Flow Rate:	10.0 gpm @15 psi	Capacity:	35,614 grains @ 8.0 lb. salt
Pressure:	30 - 40 psi		51,659 grains @ 16.0 lb. salt
Acidity:	Non-Corrosive		60,523 grains @ 24.0 lb. salt
Temperature:	68° (20°C)	pH:	7.6
Efficiency Rated Dosage†:	4,450 gr/lb		



Softener Specifications:

Max. Flow Rate: 10.0 gpm (38 Lpm)	Pressure Drop at Max. Flow Rate: 15 psi (109 kPa)
Operating Temp. Range: 33-125°F (1-50°C)	Max. Drain Flow Rate: 2.6 gpm (6.1 Lpm)
Working Press. Range: 20-120 psi (140-860 kPa)	Oper. Pressure Range (Canada): 20 - 90 psi (140 - 620 kPa)

Name of Substance	USEPA Maximum Contaminant Level	pH	Flow Rate	Pressure
Barium	2.0 mg/L	7.5 + 0.5	10.0 gpm	15 (psig)
Radium 226/228	5 pCi/L	7.5 + 0.5	10.0 gpm	15 (psig)

This system is certified for barium and radium 226/228 reduction based on hardness reduction. It is recommended you test your water every 6 months to ensure the system is performing properly and that hardness, and therefore barium and radium 226/228, are being reduced. Hardness test strips have been included. Additional strips are available from your local Culligan dealer.

The Culligan Gold Series 12" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 44 for the effective reduction of hardness (calcium and magnesium) and barium/radium as verified and substantiated by test data.

The Culligan Gold Series 12" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 61 for material requirements.

An efficiency rated water softener is a DIR softener which also complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in its operation. Efficiency rated water softeners shall have a rated salt efficiency of not less than 3350 grains of total hardness exchange per pound of salt (based on NaCl equivalency) (477 grams of total hardness exchange per kilogram of salt), and shall not deliver more salt than its listed rating. The efficiency is measured by a laboratory test described in NSF/ANSI 44. The test represents the maximum possible efficiency the system can achieve. Operational efficiency is the actual efficiency achieved after the system has been installed. It is typically less than the efficiency due to individual application factors including water hardness, water usage, and other contaminants that reduce the softener's capacity.

Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan Man. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Culligan water softeners are designed to work with any salt of good quality, although it is recommended that you ask your local Culligan Man for his suggestion on the best type and grade of salt to use in this softener.

Notice: This softener is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

† The efficiency rated dosage is only valid at the 7lb. salt dosage for 12" models.

Buyer Signature _____ Date _____
Seller Signature _____ Date _____



Performance Data Sheet

Culligan Gold 12" Aqua-Sensor*

Culligan knows the more informed you are about your water treatment systems, the more confident you will be about its performance. It's because of this and more than seventy years of commitment to customer satisfaction that Culligan is providing this Performance Data Sheet to its customers.

Important Notice: Read this Performance Data Sheet and compare the capabilities of this unit with your actual water treatment needs. It is recommended that before purchasing a water treatment unit, you have your water supply tested to determine your actual water treatment needs.

Manufacturer: Culligan International Company
9399 W. Higgins Rd., Suite 1100, Rosemont, IL 60018 USA
(847) 430-2800

Product: Culligan Gold 12" Aqua-Sensor*



Testing Conditions & Results:

Flow Rate:	10.0 gpm @ 15 psi	Capacity:	35,614 grains @ 8.0 lb. salt
Pressure:	30 - 40 psi		51,659 grains @ 16.0 lb. salt
Acidity:	Non-Corrosive		60,523 grains @ 24.0 lb. salt
Temperature:	68° (20°C)	pH:	7.6
Efficiency Rated Dosage†:	4,450 gr/lb		

Softener Specifications:

Max. Flow Rate: 10.0 gpm (38 Lpm)	Pressure Drop at Max. Flow Rate: 15 psi (109 kPa)
Operating Temp. Range: 33-125°F (1-50°C)	Max. Drain Flow Rate: 2.6 gpm (6.1 Lpm)
Working Press. Range: 20-120 psi (140-860 kPa)	Oper. Pressure Range (Canada): 20 - 90 psi (140 - 620 kPa)

Name of Substance	USEPA Maximum Contaminant Level	pH	Flow Rate	Pressure
Barium	2.0 mg/L	7.5 + 0.5	10.0 gpm	15 (psig)
Radium 226/228	5 pCi/L	7.5 + 0.5	10.0 gpm	15 (psig)

This system is certified for barium and radium 226/228 reduction based on hardness reduction. It is recommended you test your water every 6 months to ensure the system is performing properly and that hardness, and therefore barium and radium 226/228, are being reduced. Hardness test strips have been included. Additional strips are available from your local Culligan dealer.

The Culligan Gold Series 12" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 44 for the effective reduction of hardness (calcium and magnesium) and barium/radium as verified and substantiated by test data.

The Culligan Gold Series 12" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 61 for material requirements.

An efficiency rated water softener is a DIR softener which also complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in its operation. Efficiency rated water softeners shall have a rated salt efficiency of not less than 3350 grains of total hardness exchange per pound of salt (based on NaCl equivalency) (477 grams of total hardness exchange per kilogram of salt), and shall not deliver more salt than its listed rating. The efficiency is measured by a laboratory test described in NSF/ANSI 44. The test represents the maximum possible efficiency the system can achieve. Operational efficiency is the actual efficiency achieved after the system has been installed. It is typically less than the efficiency due to individual application factors including water hardness, water usage, and other contaminants that reduce the softener's capacity.

Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan Man. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Culligan water softeners are designed to work with any salt of good quality, although it is recommended that you ask your local Culligan Man for his suggestion on the best type and grade of salt to use in this softener.

Notice: This softener is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

† The efficiency rated dosage is only valid at the 7lb. salt dosage for 12" models.

Buyer Signature _____ Date _____
Seller Signature _____ Date _____



Culligan knows the more informed you are about your water treatment systems, the more confident you will be about its performance. It's because of this and more than seventy years of commitment to customer satisfaction that Culligan is providing this Performance Data Sheet to its customers.

Important Notice: Read this Performance Data Sheet and compare the capabilities of this unit with your actual water treatment needs. It is recommended that before purchasing a water treatment unit, you have your water supply tested to determine your actual water treatment needs.

Manufacturer: Culligan International Company
 9399 W. Higgins Rd., Suite 1100, Rosemont, IL 60018 USA
 (847) 430-2800

Product: Culligan Gold 14" Soft-Minder[®]



Testing Conditions & Results:

Flow Rate:	10.6 gpm @ 15 psi	Capacity:	53,540 grains @ 12.0 lb. salt
Pressure:	30 - 40 psi		77,660 grains @ 24.0 lb. salt
Acidity:	Non-Corrosive		90,986 grains @ 36.0 lb. salt
Temperature:	68° (20°C)	pH:	7.6
Efficiency Rated Dosage†:	4,460 gr/lb		

Softener Specifications:

Max. Flow Rate: 10.6 gpm (40.1 Lpm)	Pressure Drop at Max. Flow Rate: 15 psi (109 kPa)
Operating Temp. Range: 33-125°F (1-50°C)	Max. Drain Flow Rate: 6.6 gpm (6.1 Lpm)
Working Press. Range: 20-120 psi (140-860 kPa)	Oper. Pressure Range (Canada): 20 - 90 psi (140 - 620 kPa)

Name of Substance	USEPA Maximum Contaminant Level	pH	Flow Rate	Pressure
Barium	2.0 mg/L	7.5 + 0.5	10.6 gpm	15 (psig)
Radium 226/228	5 pCi/L	7.5 + 0.5	10.6 gpm	15 (psig)

This system is certified for barium and radium 226/228 reduction based on hardness reduction. It is recommended you test your water every 6 months to ensure the system is performing properly and that hardness, and therefore barium and radium 226/228, are being reduced. Hardness test strips have been included. Additional strips are available from your local Culligan dealer.

The Culligan Gold Series 14" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 44 for the effective reduction of hardness (calcium and magnesium) and barium/radium as verified and substantiated by test data.

The Culligan Gold Series 14" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 61 for material requirements.

An efficiency rated water softener is a DIR softener which also complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in its operation. Efficiency rated water softeners shall have a rated salt efficiency of not less than 3350 grains of total hardness exchange per pound of salt (based on NaCl equivalency) (477 grams of total hardness exchange per kilogram of salt), and shall not deliver more salt than its listed rating. The efficiency is measured by a laboratory test described in NSF/ANSI 44. The test represents the maximum possible efficiency the system can achieve. Operational efficiency is the actual efficiency achieved after the system has been installed. It is typically less than the efficiency due to individual application factors including water hardness, water usage, and other contaminants that reduce the softener's capacity.

Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan Man. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Culligan water softeners are designed to work with any salt of good quality, although it is recommended that you ask your local Culligan Man for his suggestion on the best type and grade of salt to use in this softener.

Notice: This softener is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

† The efficiency rated dosage is only valid at the 12lb. salt dosage for 14" models.

Buyer Signature _____ Date _____
 Seller Signature _____ Date _____

Performance Data Sheet

Culligan Gold Series™
 14" Water Softener
 with Soft-Minder®
 Meter



Performance Data Sheet

Culligan Gold 14" Aqua-Sensor*

Culligan knows the more informed you are about your water treatment systems, the more confident you will be about its performance. It's because of this and more than seventy years of commitment to customer satisfaction that Culligan is providing this Performance Data Sheet to its customers.

Important Notice: Read this Performance Data Sheet and compare the capabilities of this unit with your actual water treatment needs. It is recommended that before purchasing a water treatment unit, you have your water supply tested to determine your actual water treatment needs.

Manufacturer: Culligan International Company
9399 W. Higgins Rd., Suite 1100, Rosemont, IL 60018 USA
(847) 430-2800

Product: Culligan Gold 14" Aqua-Sensor*



Testing Conditions & Results:

Flow Rate:	10.6 gpm @ 15 psi	Capacity:	53,540 grains @ 12.0 lb. salt
Pressure:	30 - 40 psi		77,660 grains @ 24.0 lb. salt
Acidity:	Non-Corrosive		90,986 grains @ 36.0 lb. salt
Temperature:	68° (20°C)	pH:	7.6
Efficiency Rated Dosage†:	4,460 gr/lb		

Softener Specifications:

Max. Flow Rate: 10.6 gpm (40.1 Lpm)	Pressure Drop at Max. Flow Rate: 15 psi (109 kPa)
Operating Temp. Range: 33-125°F (1-50°C)	Max. Drain Flow Rate: 6.6 gpm (6.1 Lpm)
Working Press. Range: 20-120 psi (140-860 kPa)	Oper. Pressure Range (Canada): 20 - 90 psi (140 - 620 kPa)

Name of Substance	USEPA Maximum Contaminant Level	pH	Flow Rate	Pressure
Barium	2.0 mg/L	7.5 + 0.5	10.6 gpm	15 (psig)
Radium 226/228	5 pCi/L	7.5 + 0.5	10.6 gpm	15 (psig)

This system is certified for barium and radium 226/228 reduction based on hardness reduction. It is recommended you test your water every 6 months to ensure the system is performing properly and that hardness, and therefore barium and radium 226/228, are being reduced. Hardness test strips have been included. Additional strips are available from your local Culligan dealer.

The Culligan Gold Series 14" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 44 for the effective reduction of hardness (calcium and magnesium) and barium/radium as verified and substantiated by test data.

The Culligan Gold Series 14" Water Softeners are tested and certified by WQA against NSF/ANSI Standard 61 for material requirements.

An efficiency rated water softener is a DIR softener which also complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in its operation. Efficiency rated water softeners shall have a rated salt efficiency of not less than 3350 grains of total hardness exchange per pound of salt (based on NaCl equivalency) (477 grams of total hardness exchange per kilogram of salt), and shall not deliver more salt than its listed rating. The efficiency is measured by a laboratory test described in NSF/ANSI 44. The test represents the maximum possible efficiency the system can achieve. Operational efficiency is the actual efficiency achieved after the system has been installed. It is typically less than the efficiency due to individual application factors including water hardness, water usage, and other contaminants that reduce the softener's capacity.

Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan Man. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Culligan water softeners are designed to work with any salt of good quality, although it is recommended that you ask your local Culligan Man for his suggestion on the best type and grade of salt to use in this softener.

Notice: This softener is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

† The efficiency rated dosage is only valid at the 12lb. salt dosage for 14" models.

Buyer Signature _____ Date _____
Seller Signature _____ Date _____



California
Certifications

State of California
Department of Public Health
Water Treatment Device
Certificate Number
09 - 1986

Date Issued: June 4, 2009

Trademark/Model Designation

Culligan International Company Gold 9" Soft-Minder

Culligan International Company Gold 9" Aqua-Sensor

Replacement Elements

Manufacturer: Culligan International Company

The water treatment device(s) listed on this certificate have met the testing requirements pursuant to Section 116830 of the Health and Safety Code for the following health related contaminants:

Microbiological Contaminants and Turbidity

None

Inorganic/Radiological Contaminants

Barium

Radium

Organic Contaminants

None

Rated Service Capacity: N/A

Rated Service Flow: 9 gpm

Conditions of Certification:

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



State of California
Department of Public Health
Water Treatment Device
Certificate Number
09 - 2027

Date Issued: June 4, 2009

Trademark/Model Designation

Gold 10" Aquasensor

Gold 10" Softminder

Replacement Elements

None

None

Manufacturer: Culligan International Company

The water treatment device(s) listed on this certificate have met the testing requirements pursuant to Section 116830 of the Health and Safety Code for the following health related contaminants:

Microbiological Contaminants and Turbidity

None

Inorganic/Radiological Contaminants

Barium

Radium 226/228

Organic Contaminants

None

Rated Service Capacity: N/A

Rated Service Flow: 9.4 gpm

Conditions of Certification:

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



State of California
Department of Public Health
Water Treatment Device
Certificate Number
09 - 1988

Date Issued: June 4, 2009

Trademark/Model Designation

Culligan International Company Gold 12" Soft-Minder

Culligan International Company Gold 12" Aqua-Sensor

Replacement Elements

Manufacturer: Culligan International Company

The water treatment device(s) listed on this certificate have met the testing requirements pursuant to Section 116830 of the Health and Safety Code for the following health related contaminants:

Microbiological Contaminants and Turbidity

None

Inorganic/Radiological Contaminants

Barium

Radium

Organic Contaminants

None

Rated Service Capacity: N/A

Rated Service Flow: 10 gpm

Conditions of Certification:

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



State of California
Department of Public Health
Water Treatment Device
Certificate Number
09 - 1985

Date Issued: June 4, 2009

Trademark/Model Designation

Culligan International Company Gold 14" Soft-Minder

Culligan International Company Gold 14" Aqua-Sensor

Replacement Elements

Manufacturer: Culligan International Company

The water treatment device(s) listed on this certificate have met the testing requirements pursuant to Section 116830 of the Health and Safety Code for the following health related contaminants:

Microbiological Contaminants and Turbidity

None

Inorganic/Radiological Contaminants

Barium

Radium

Organic Contaminants

None

Rated Service Capacity: N/A

Rated Service Flow: 10.6 gpm

Conditions of Certification:

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



Familiarize yourself with the replacement procedures and component parts thoroughly before attempting any repair.



Warning! Disconnect all electrical power to the unit before servicing. Bypass the unit and relieve system pressure before attempting repair.

Circuit Board

To replace the AccuSoft™ Plus circuit board, refer to the parts list and proceed as follows:

1. Remove the timer cover by unsnapping it from the back plate.



Caution! Grip all connections to the circuit board by the connecting terminals for assembly and disassembly. Failure to do so could result in damage to the wire leads or connecting terminals.

2. Unhook the circuit board mounting plate by lifting the top snap and removing from the backplate.



Caution! Do not touch any surfaces of the circuit board. Electrical static discharges may cause damage to the board. Handle the AccuSoft™ circuit board by holding only the edges of the circuit board. Keep replacement boards in their special anti-static bags until ready for use. Mishandling of the circuit board will void the warranty.

3. Remove all connected wire leads from the board.
4. Unsnap the circuit board from the mounting plate. See Figure 15.
5. The new circuit board can be installed by reversing the steps 1-4 above. When reassembling the mounting plate to the backplate, it is easiest to hook the top snap first and then gently push the base in until it snaps into place.



Caution! The wire connectors must be connected to the circuit board properly. The wires must exit the plug-in connector opposite of the raised white base of the circuit board connector.

Caution! Extra care should be taken when connecting the 2.5 vac and 24 vac power. Failure to connect properly will result in damage to the circuit board.

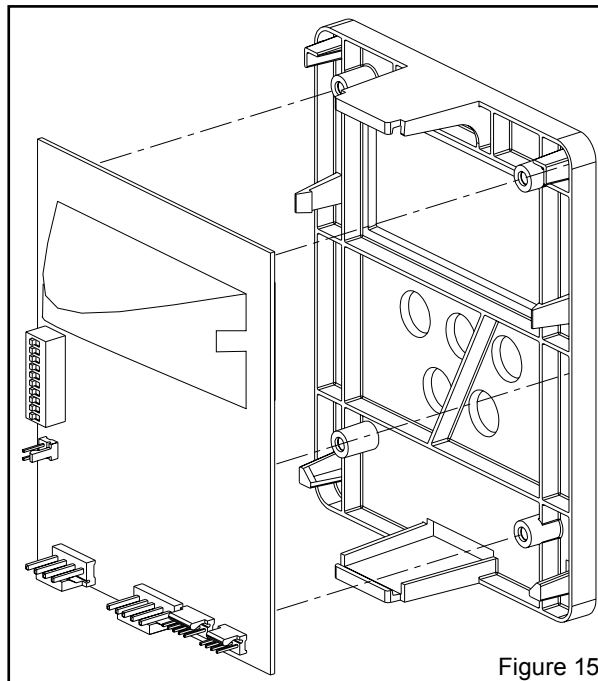


Figure 15



Refer to Figure 16 for assembly and disassembly of the various valve components listed below.

Drive Motor Assembly

1. Remove the drive motor cam switches by removing the one screw holding the switches to the motor
2. Remove the E-ring holding the drive motor cam to the camshaft with a flat tip screwdriver.
3. Lift the cam off the shaft.
4. Remove the screw above the eductor piston assembly.
5. Loosen the two screws holding the yoke support plate and the motor to the control valve.
6. Remove the yoke support plate and yoke by gently pulling them down.

Note: Care should be taken to not damage the brine piston if it is not going to be replaced. The brine piston will need to be twisted slightly in order to remove it from the motor die casting.

7. Fully remove the two screws holding the motor to the control. The motor will pull away from the control.

Note: The seal pack may need to be repositioned in order for the follower to be inserted into the yoke, using the motor and backplate to push the seal pack fully into the valve is helpful in aligning the yoke. Make sure that the follower is in the follower slot on the yoke, and that the end of the piston rod is held in the end of the yoke.

Note: When attaching the support plate be certain to push up on the plate until the two mounting screws bottom in the U-shaped channels of the support plate.

This procedure can be followed in the reverse order to reassemble the motor to the control. When reassembling the scotch yoke, the yoke must slide into the yoke support plate prior to pushing the assembly up into the piston end and follower. Figure 17 shows proper assembly of the yoke into the support plate.

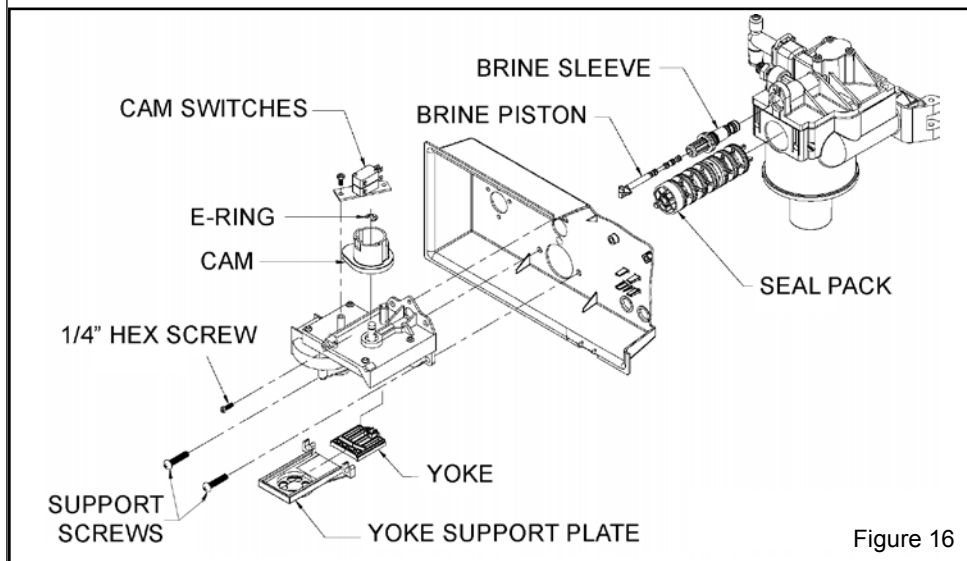


Figure 16



Seal Pack Assembly

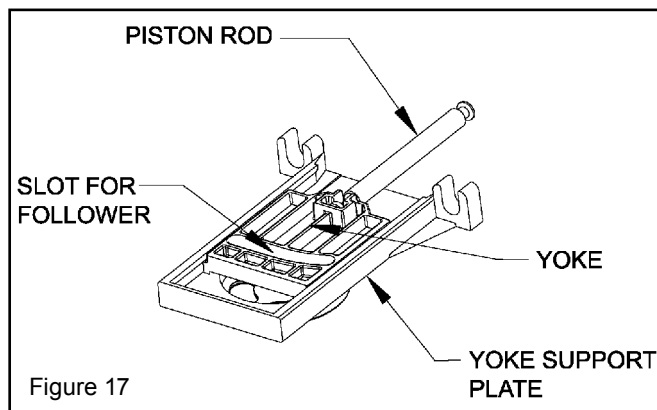
Note: Use only silicone grease; petroleum-based lubricants will cause the degradation of the rubber components.



Caution! Do not twist the seal pack upon insertion. This can cause the outer o-rings to pinch, cut, or crimp.

Follow the instructions for the replacing drive motor assembly through step 7, then continue as follows:

1. With the drive motor set aside, firmly pull the seal pack assembly from the valve body.
2. Lightly lubricate the o-rings of the replacement seal pack with silicone grease.
3. Reverse the procedure for reassembly.



Note: Use only silicone grease; petroleum-based lubricants will cause the degradation of the rubber components.

Note: The eductor piston & sleeve assemblies are unique to the softener, filter, and controls. Refer to the parts list to ensure that the proper assembly is used.

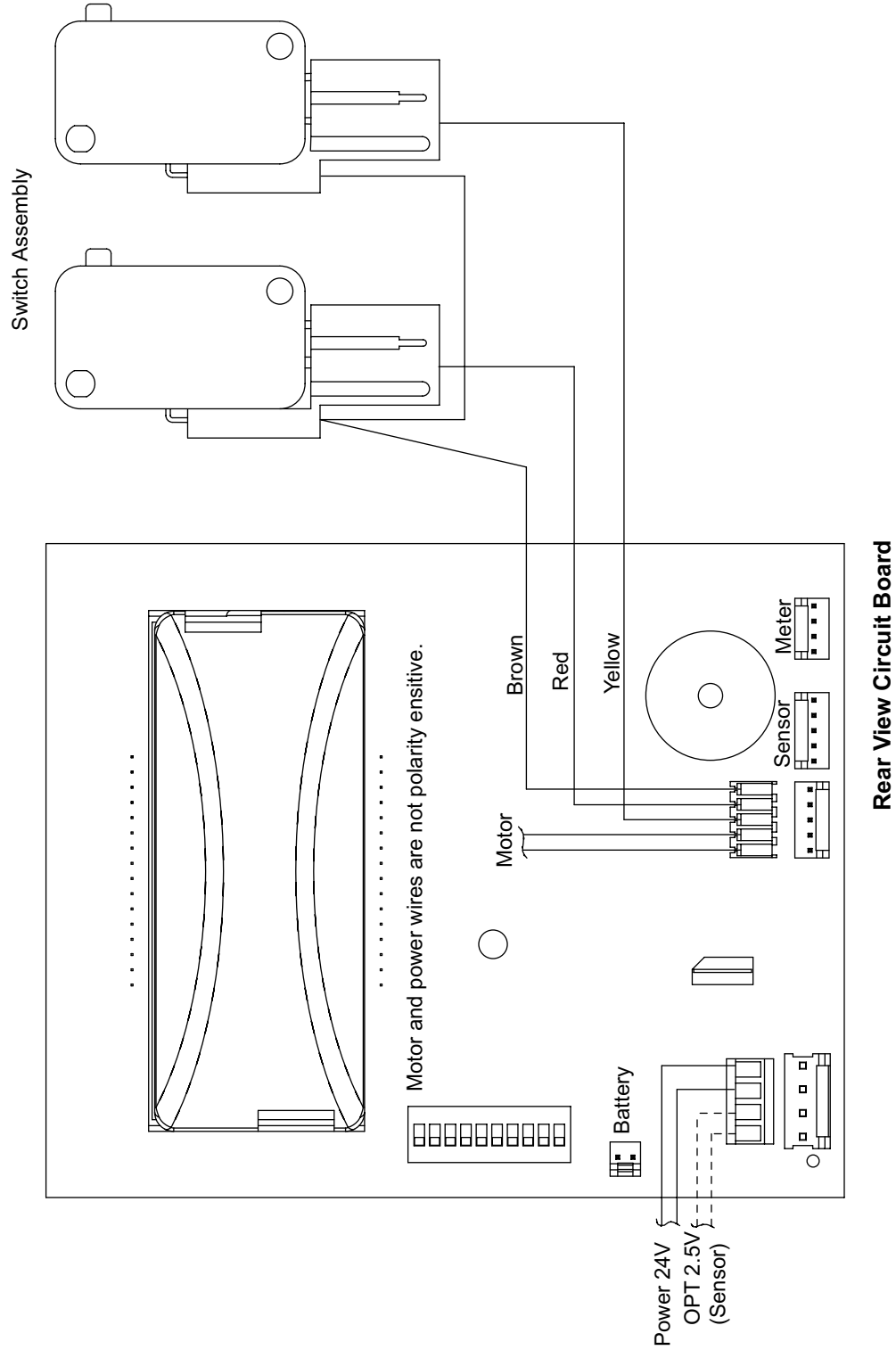
Eductor Piston/Eductor Sleeve Assembly

Follow the instructions for the replacing drive motor assembly through step 7, then continue as follows:

1. With the drive motor set aside, firmly pull the eductor piston & sleeve assembly from the valve body.
2. Lightly lubricate the o-rings of the replacement piston & sleeve assembly with silicone grease.
3. Reverse the procedure for reassembly.



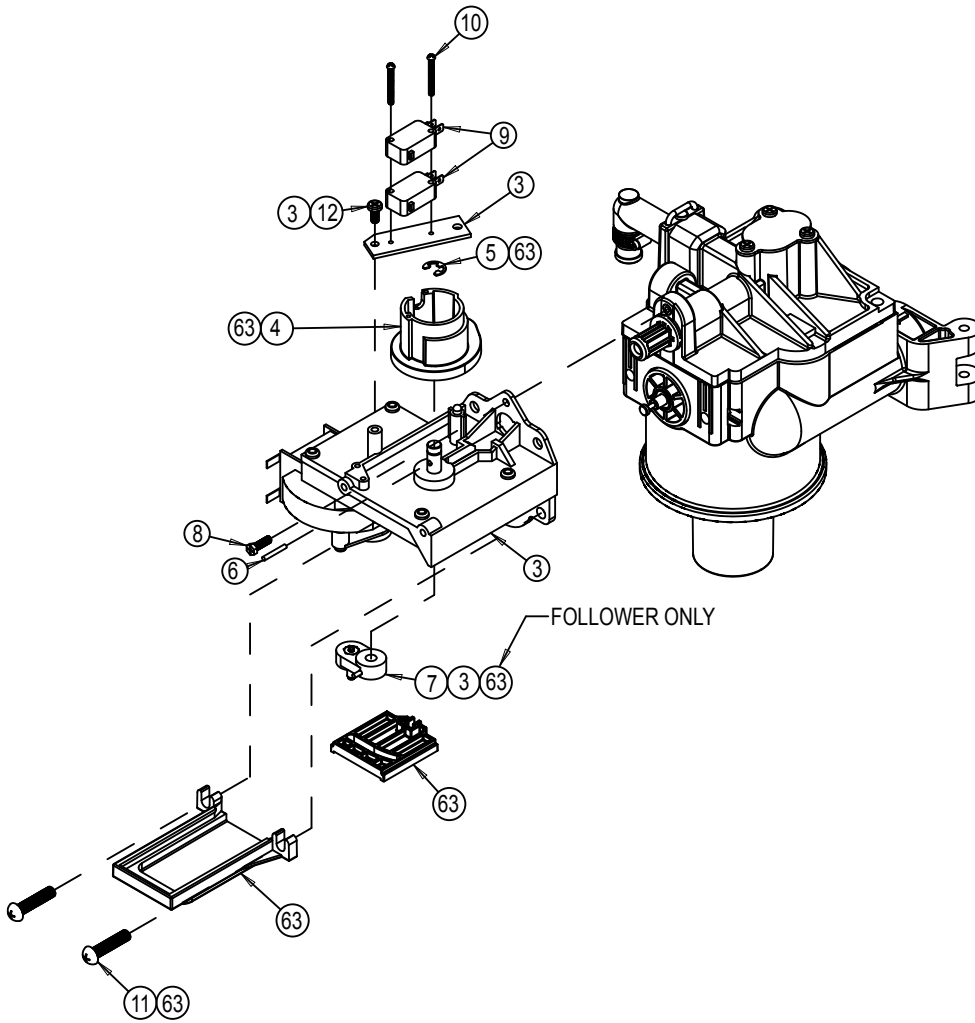
Wiring Schematic

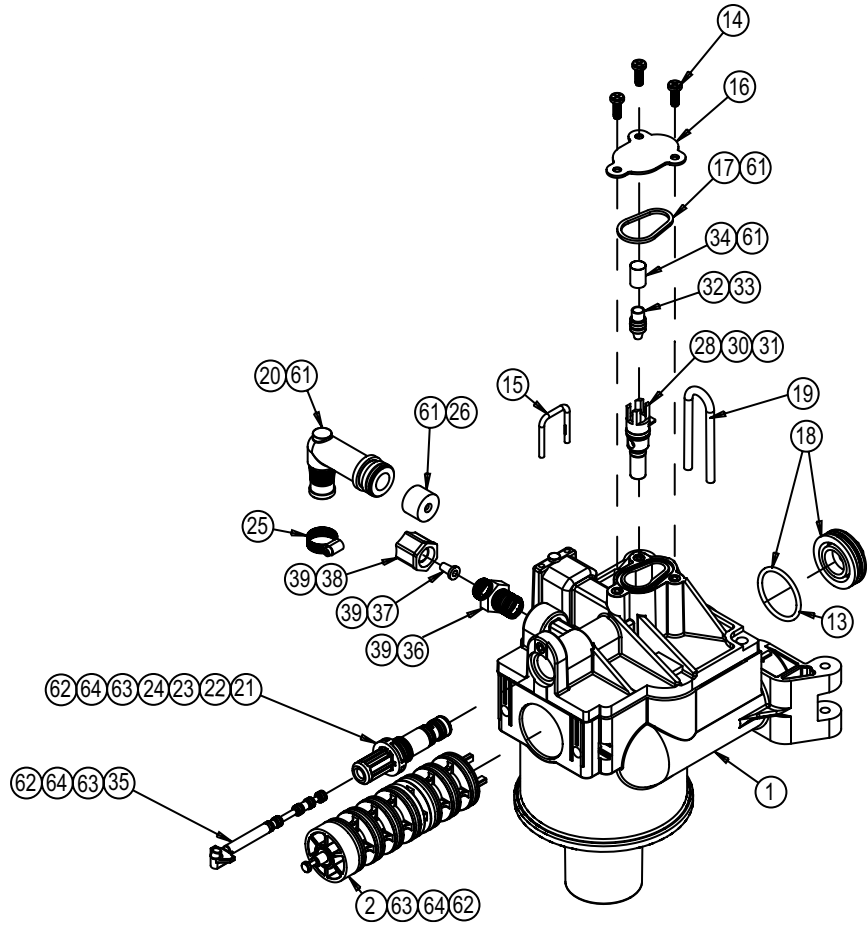




Parts List

Gold Series
Softener Valve

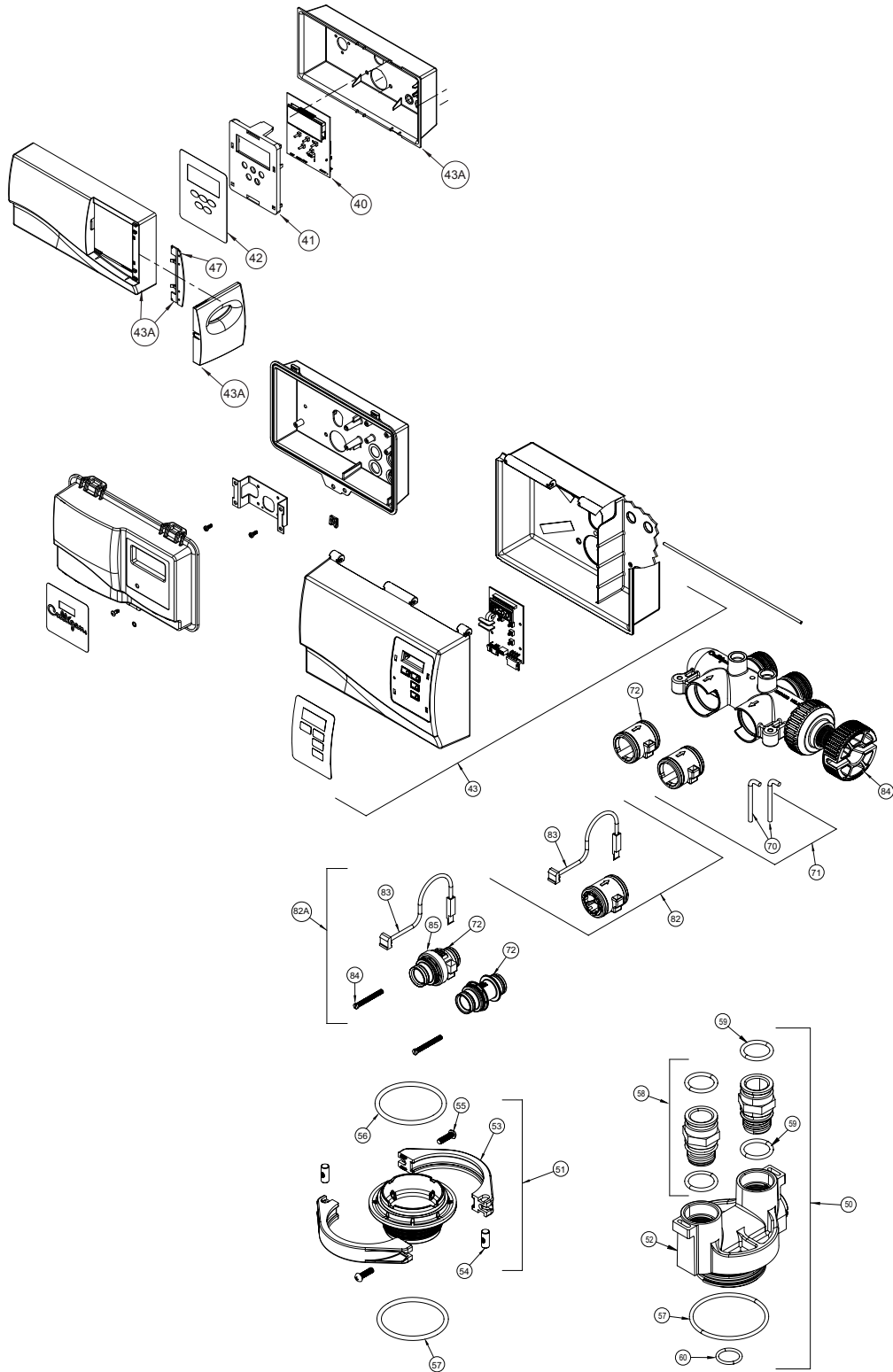






Parts List

Power Valve Service Parts List





Item #	Part #	DESCRIPTION	Quantity/Pack
*	01018857	Gold Series Control - Complete	1 Each
*	01018920	Outdoor Gold Series Control - Complete	1 Each
1	01013976	Control Valve Body 1"	1 Each
2	01013083	Seal Pack Assembly	1 Each
3	01014179	Drive Motor Kit 24V	1 Each
4	P1013031	Drive Cam	10 Each/Pack
5	P1013043	Retaining E-ring	10 Each/Pack
6	P0445246	Pin	25 Each/Pack
7	P1013677	Bell Crank/Follower Kit	10 Each/Pack
8	P1001784	Screw, motor retaining, top	25 Each/Pack
9	P1003244	Microswitch 24v	10 Each/Pack
10	P0448686	Screw, Microswitch retaining	25 Each/Pack
11	P0318452	Screw, Motor retaining, bottom	25 Each/Pack
12	P0318455	Screw, Microswitch Plate	25 Each/Pack
13	P0444914	O-ring, Rear Seal	10 Each/Pack
14	P0448687	Screw, Eductor Cover	25 Each/Pack
15	P0447387	Clip, Drain Elbow	25 Each/Pack
16	P0401022	Eductor Cover	10 Each/Pack
17	P0445797	Seal, Eductor Port	10 Each/Pack
18	00448126	Plug, Body, Rear	1 Each
19	P0448128	Clip, Body, Rear	10 Each/Pack
20	P1017758	Drain Elbow Assembly	10 Each/Pack
21	P0448853	Repl Eductor Sleeve (Softener)	10 Each/Pack
22	P0447986	O-ring, Eductor Sleeve, Small	25 Each/Pack
23	P0308407	O-ring, Eductor Sleeve, Large	25 Each/Pack
24	P0448750	Screen, Eductor Sleeve	10 Each/Pack
25	P0451701	Hose Clamp, Drain	25 Each/Pack
26	P0331634	FC Washer, 1.2 GPM Black	10 Each/Pack
*	P0331635	FC Washer, 2.0 GPM Brown	10 Each/Pack
*	P0331636	FC Washer, 3.5 GPM Green	10 Each/Pack
28	P0401248	Eductor Throat, Brown (9"10"12")w/O-rings	10 Each/Pack
30	P0308437	O-Ring, Eductor Throat/Plug, Large	25 Each/Pack
31	P0308438	O-Ring, Eductor Throat, Small	10 Each/Pack
32	P1013894	Eductor Nozzle, Blue (9", 10") w/ O-ring	10 Each/Pack
32	P1013895	Eductor Nozzle, Beige (10", 12") w/ O-ring	10 Each/Pack
33	P0308438	O-ring, Eductor Nozzle	10 Each/Pack
34	P0445269	Eductor Screen	10 Each/Pack
35	P0447987	O-ring, brine piston	10 Each/Pack
3	P1018776	Connector, Brine Line, 3/8"	25 Each/Pack
*	00447915	Connector, Brine Line, 1/2"	1 Each
37B	P1018871	Insert, Brine Line Connector, 3/8"	25 Each/Pack
*	00440516	Insert, Brine Line Connector, 1/2"	1 Each

* not shown



Parts List

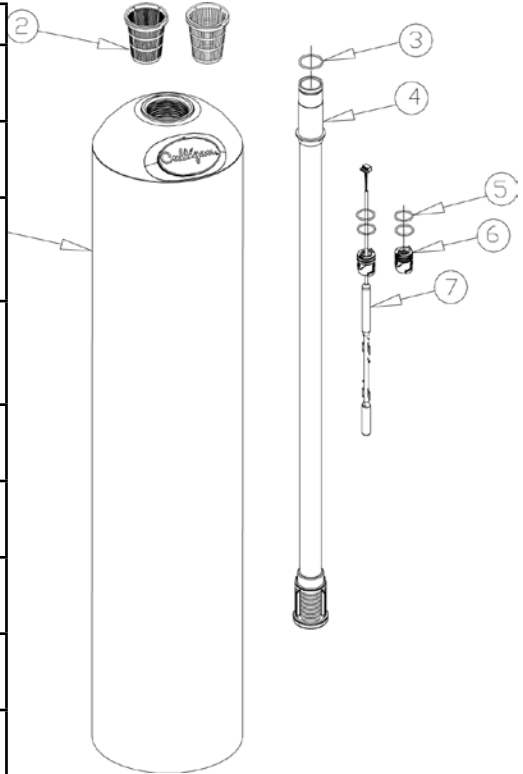
38	P1002205	Nut, Brine Line Connector, 3/8"	25 Each/Pack
39	00440402	Nut, Brine Line Connector, 1/2"	1 Each
40	01018852	Circuit Board Kit	1 Each
41	01016476	Circuit Board Holder	1 Each
42	P1016478	Circuit Board Decal	5 Each/Pack
43	01019709	Enclosure Kit - Outdoor	1 Each
43A	01019707	Enclosure Kit - Indoor	1 Each
44	P1014734	Wire Harness - CB Gold/Medallist	5 Each/Pack
45	01017134	Power Cord	1 Each
46	P1000372	Cord Grip (Power Cord)	25 Each/Pack
47	P1014030	Hinge	10 Each/Pack
51	01014153	Adapter Assy, 1" valve to tank w/o O-ring	1 Each
52	01013958	Tank Adapter, 1" Valve	1 Each
53	P1013959	Tank Clamp, 1" Valve	10 Each/Pack
54	P1013669	Tank Clamp Pin, 1" Valve	10 Each/Pack
55	P0318383	Tank Clamp Screw, 1" Valve/3/4" bkt	10 Each/Pack
56	P1014848	O-ring, Large, 1" Valve to Tank Adapter	25 Each/Pack
57	P0440052	O-ring, 3/4"/1" Valve Adapter to ACME Tank	25 Each/Pack
61	01016266	Eductor Rebuild Kit (Softeners)	1 Each
62	01016267	Rebuild Kit - Brine Piston/Seal Pack	1 Each
63	01016269	Seal Pack/Bell Crank Kit	1 Each
64	01013033	Seal Pack/Brine/Cam (Softeners)	1 Each
67	01018760	Bypass Valve - 1"/1-1/4" Rotary	1 Each
*	01018249	1 1/4" Straight Through Adapter	1 Each
*	01018755	Rebuild Kit - 1"/1-1/4" Rotary Bypass	1 Each
*	P1019646	Bypass O-Ring	50 Each/Pack
70	P1009075	Retaining Clip, 1" Bypass valve	10 Each/Pack
71	01014033	Coupling Kit - 1" Bypass	1 Kit
72	P1009099	O-ring, 1" Couplings/Meters	50 Each/Pack
*	01010783	1" Copper Adapter Kit, (1" Bypass)	1 Each
*	01016564	3/4" Copper Adapter Kit (1" Bypass)	1 Pair
*	01016565	3/4" Elbow Copper Adapter Kit (1" Bypass)	1 Pair
*	P1018757	1" NPT Female Elbow Kit (1" Bypass)	5 Pair/Pack
*	P1018758	1" NPT Kit (1" Bypass)	5 Pair/Pack
*	P1009856	Gasket, Copper Plumbing Adapters	25 Each/Pack
82	01011188	Meter Kit - 1" w/wire harness	1 Each
83	01008070	Wire Harness, 3/4"/1" Meters	1 Each
*	01018133	Transformer, Dual Output	1 Each
*	01013839	Backup Battery, Gold	1 Each



Parts List

Tank Assembly

Item	Part No.	Description	Qty.
1	01016617	Tank Assembly, 9" w/ Fillport, Complete	
	01016618	Tank Assembly, 10" w/ Fillport, Complete	
	01017192	Tank Assembly, 12" w/ Fillport, Complete, Less Media	
	01017194	Tank Assembly, 14" w/ Fillport, Complete, Less Media	
	01016351	Tank Assembly, 9" w/o Fillport, Complete	
	01016352	Tank Assembly, 10" w/o Fillport, Complete	
	01016349	Tank Replacement, 9", w/ Fillport, Empty	
	01016350	Tank Replacement, 10", w/ Fillport, Empty	
	01016520	Tank Replacement, 12", w/ Fillport, Empty	
	01016522	Tank Replacement, 14", w/ Fillport, Empty	
	01016347	Tank Replacement, 9", w/o Fillport, Empty	
	01016348	Tank Replacement, 10", w/o Fillport, Empty	
2	P1009847	Top Strainer - Fine Slot (10 ea/Pack)	
	P1011195	Top Strainer - Wide Slot (10 ea/Pack)	1
3	P1009099	O-Ring, Manifold (50 ea/Pack)	1
4	01016176	Outlet Manifold - 9"	1
4	01014539	Outlet Manifold - 10"	1
4	01018846	Outlet Manifold - 12"	1
4	01016429	Outlet Manifold - 14"	1
5	P1017434	O-Ring, Plug and Sensor (10 ea/Pack)	2
6	01015122	Plug	1
7	01018763	Aqua-Sensor® Probe	1

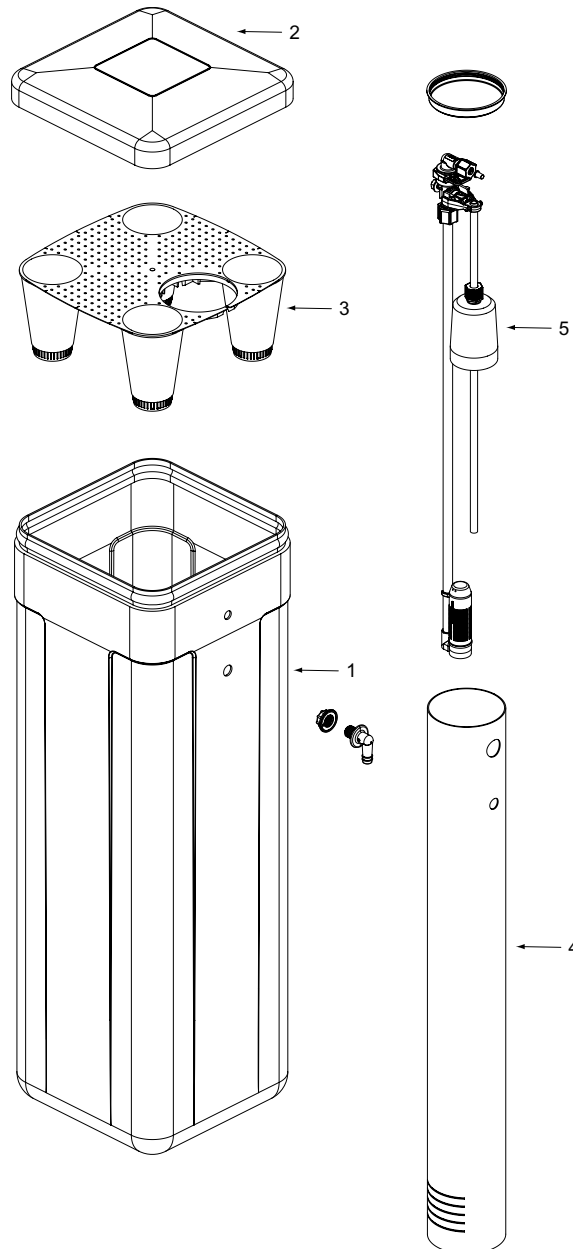




Item	Part Number	Description
-	01018770	Brine System, 156 lb
1	01018769	Replacement Tank, 156 lb
2		Cover, 156 lb
3	01018764	Salt Plate, 156 lb
4	01018768	Brine Chamber, 156 lb
5	01018706	Brine Valve
6	P1020190	Overflow Fitting w/Nut (24 Each/Pack)

Parts List

11" Brine System

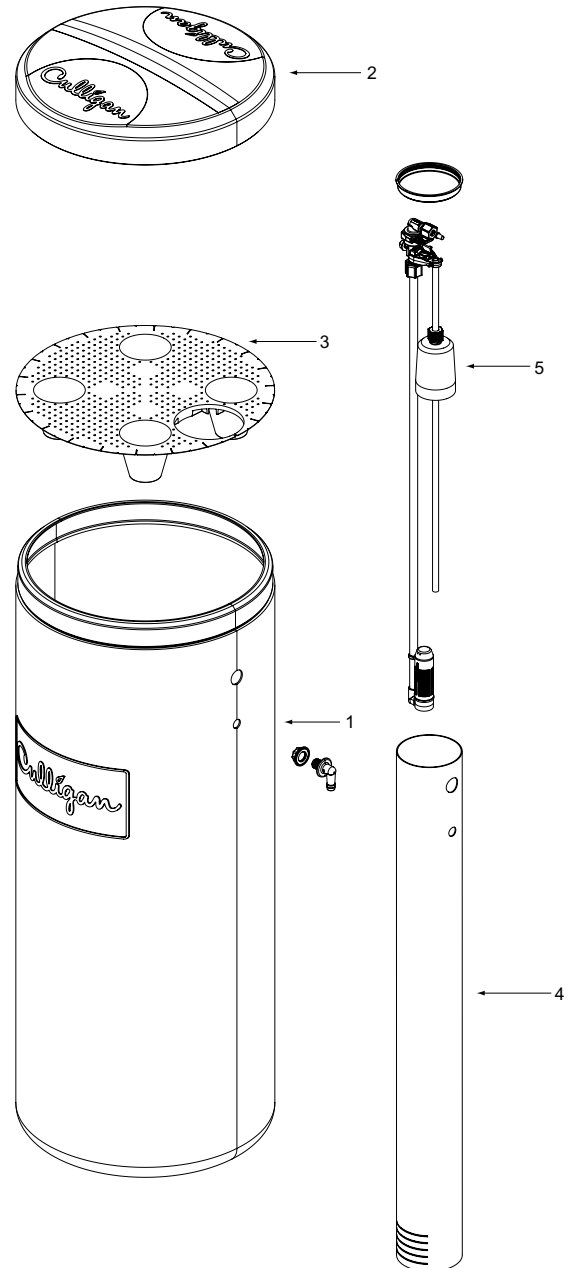




Parts List

16" and 18"
Brine Systems

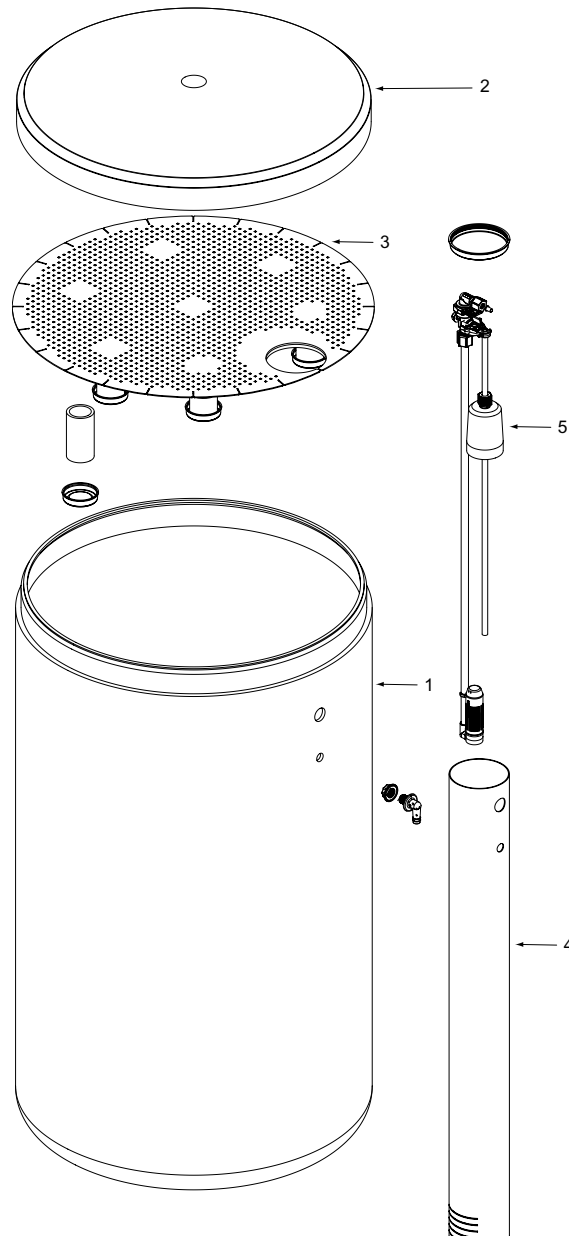
Item	Part Number	Description
-	01018705	Brine System, 250 lb
-	01018715	Brine System, 375 lb
1	01018709	Replacement Tank, 250 lb
	01018716	Replacement Tank, 375 lb
2		Cover, 250 lb
	01018717	Cover, 375 lb
3	01018707	Salt Plate, 250 lb
	01018713	Salt Plate, 375 lb
4	01018707	Brine Chamber, 250 lb & 375 lb
5	01018706	Brine Valve
6	P1020190	Overflow Fitting w/ Nut (24 Each/Pack)





Parts List
24" Brine System

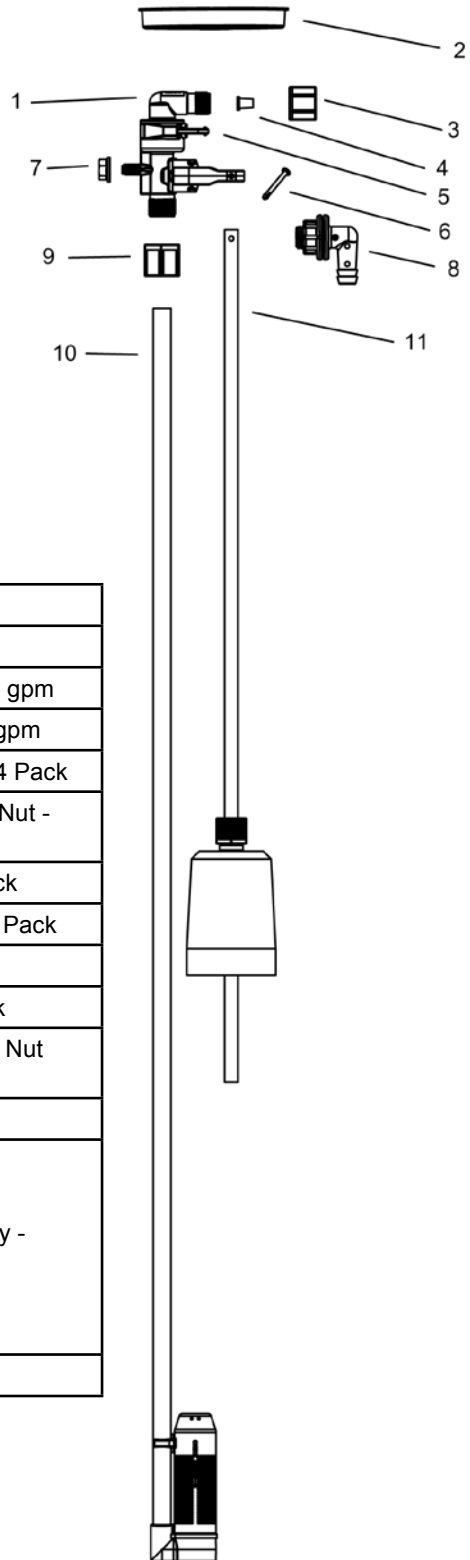
Item	Part Number	Description
-	01018720	Brine System, 650 lb
1	01018718	Replacement Tank, 650 lb
2	01018719	Cover, 650 lb
3		Salt Plate, 650 lb
4	01018708	Brine Chamber
5	01018706	Brine Valve
6	P1020190	Overflow Fitting w/Nut (24 Each/Pack)





Parts List

Brine Valve



Item No.	Part No.	Description
-	01018706	Brine Valve
1	01018710	BLFC Elbow - 0.45 gpm
	01018711	BLFC Elbow - 0.8 gpm
2	P1020194	Brine Well Cap - 24 Pack
3	P1020196	3/8" Compression Nut - 24 Pack
4	P1018871	3/8" Insert - 25 Pack
5	P1020191	Retaining Clip - 24 Pack
6	P1020192	Pin - 24 Pack
7	P1020193	5/16" Nut - 24 Pack
8	P1020190	Overflow Fitting w/ Nut - 24 Pack
9	P1020195	3/8" Nut - 24 Pack
10	P1020198	Air check Assembly - 24 Pack
11	P1020197	Float - 24 Pack



Important Data on Your Water Conditioner

It is advisable to have the salesperson or installer fill in the information below for your future reference. If this has not been done, please ask for it, as it is necessary if you contact your dealer.

Identification

Model Name _____ Catalog No. _____

Control Model No. _____ Control Serial No. _____

Date of Installation _____ Tank Serial No. _____

Settings

Salt Setting _____ lbs.

Time of Recharge: _____ a.m. _____ p.m.

Upon Demand

(Aqua-Sensor® Models)

Gallons to signal _____ gallons (Soft-Minder® Models)

Total Capacity _____ gallons (Soft-Minder® Models)

Number of people in household _____

Tank Size _____ inches

Water Analysis

Total Hardness _____ (gpg) Total Iron _____ (ppm) pH (acidity) _____

Other _____

Records and Data



Culligan Limited Warranty

Culligan Gold Series™ Automatic Water Conditioners

You have just purchased one of the finest water conditioners made. As an expression of our confidence in Culligan International Company products, your water conditioner is warranted to the original end-user, when installed in accordance with Culligan specifications, against defects in material and workmanship from the date of original installation, as follows:

For a period of ONE YEAR	The entire conditioner
For a period of FIVE YEARS	Soft-Minder® meter, or Aqua-Sensor® probe if so equipped.
For a period of TEN YEARS	The AccuSoft® Plus circuit board, The control valve body, excluding internal parts. The salt storage container, brine valve and all its component parts
For the LIFETIME of the original consumer purchaser	The Quadra-Hull™ conditioner tank and the Cullex® resin

If a part described above is found defective within the specified period, you should notify your independently operated Culligan dealer and arrange a time during normal business hours for the dealer to inspect the water conditioner on your premises. Any part found defective within the terms of this warranty will be repaired or replaced by the dealer. You pay only freight from our factory and local dealer charges.

We are not responsible for damage caused by accident, fire, flood, freezing, Act of God, misuse, misapplication, neglect, oxidizing agents (such as chlorine, ozone, chloramines and other related components), alteration, installation or operation contrary to our printed instructions, or by the use of accessories or components which do not meet Culligan specifications, is not covered by this warranty. Refer to the specifications section in the Installation and Operating manual for application parameters.

Our product performance specifications are furnished with each water conditioning unit. TO THE EXTENT PERMITTED BY LAW, CULLIGAN DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE; TO THE EXTENT REQUIRED BY LAW, ANY SUCH IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE ONE-YEAR PERIOD SPECIFIED ABOVE FOR THE ENTIRE CONDITIONER. As a manufacturer, we do not know the characteristics of your water supply or the purpose for which you are purchasing a water conditioner. The quality of water supplies may vary seasonally or over a period of time, and your water usage rate may vary as well. Water characteristics can also differ considerably if your water conditioner is moved to a new location. For these reasons, we assume no liability for the determination of the proper equipment necessary to meet your requirements, and we do not authorize others to assume such obligations for us. Further, we assume no liability and extend no warranties, express or implied, for the use of this product with a non-potable water source. OUR OBLIGATIONS UNDER THIS WARRANTY ARE LIMITED TO THE REPAIR OR REPLACEMENT OF THE FAILED PARTS OF THE WATER CONDITIONER, AND WE ASSUME NO LIABILITY WHATSOEVER FOR DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL, GENERAL, OR OTHER DAMAGES.

Some states do not allow the exclusion of implied warranties or limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Similarly, some states do not allow the exclusion of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Consult your telephone directory for your local independently operated Culligan dealer, or write Culligan International Company for warranty and service information.

Culligan International Company

9399 W. Higgins Road, Suite 1100

Rosemont, Illinois 60018

www.culligan.com



You Get Your Water Expert, The Culligan Man

We're here to provide you with fast, dependable service, making sure any problems you have are taken care of. The Culligan Man has been around for over seventy years, delivery dependable service all along. That's why people say "Hey, Culligan Man!" Because we're the water experts. And that's who you want taking care of your water.

The Culligan Promise

At Culligan, we understand that a water quality improvement system is an investment in your family's well-being. That's why our 1,350 independently operated dealers worldwide don't just sell products; they sell water quality you can count on. We stand behind our products with written limited warranties and our unequaled Culligan service. No matter where you live, you can depend on Culligan expertise to work for you — today and tomorrow.

**With Culligan You
Get More Than a
Quality Product**