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Installation and Operating Instructions with Parts List

CULLIGAN MEDALLIST SERIES™

AUTOMATIC WATER FILTERS

With Cullar®, Cullneu®, or Cullsan® Media

Models from 2001

Culligan®

Printed in USA

Attention Culligan Customer:

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.

WARNING - Prior to servicing equipment, disconnect power supply to prevent electrical shock.

Culligan International
One Culligan Parkway
Northbrook, IL 60062
847-205-6000

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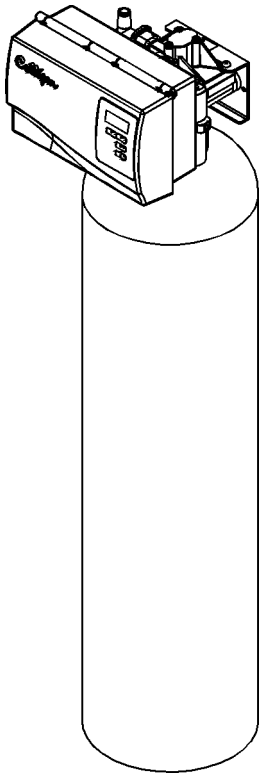


Table of Contents

Page

Introduction

For installations in Massachusetts, the Commonwealth of Massachusetts Plumbing code 248 CMR shall be adhered to. Consult with your licensed plumber for installation of this system.

SAFE PRACTICES

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

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

Example: NOTICE: *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 TIMER MECHANISM OR COVER PLATES!**

The Culligan water conditioner bears two separate serial numbers; one for the control assembly and one for the media tank. The control assembly serial number can be found on the left rear side of the timer mounting plate. The media tank serial number is on the side of the tank. **DO NOT REMOVE OR DESTROY THESE SERIAL NUMBER DECALS.** THEY MUST BE REFERENCED IF EVER YOU REQUIRE REPAIRS OR PARTS REPLACEMENT UNDER WARRANTY.

If you wish to service your system or maintain replacement components, please contact your local Culligan dealer or 1-847-205-6000 for a dealer near you.

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.

Please read this booklet carefully before beginning the installation of the Culligan Medallist Series™ Water Filter. It contains important information about the unit, including the tools and materials needed for installation, accessories available for hook-up to the plumbing, and instructions covering installation, settings, start-up, and operation. The Culligan Medallist Water Filter have been thoughtfully designed and engineered to provide conditioned water for many years when properly applied, installed and operated.

This system and installation must comply with state and local regulations.

The Medallist Automatic Cullar® filter has been tested and validated by WQA against WQA S-200 for the effective reduction of chlorine up to 100,000 gallons (8" Filter) and 130,000 gallons (10" Filter).

The Medallist Automatic Filtr-Cleer® Filter has been tested and validated by WQA against WQA S-200 for Class III (5-15um) particulate reduction as verified and substantiated by test data.

The Medallist Automatic Cullneu® Filter has been tested and validated by WQA against WQA S-200 for neutralization up to 13,000 gallons for the 8" Cullneu and 20,000 gallons for the 10" Cullneu as verified and substantiated by test data.

Specifications and Limitations

	8-INCH	*10-INCH*
GENERAL		
Mineral Tank Size[1]	8 x 44 in.	10 x 54 in.
Control	Power Valve	Power Valve
Timer	Electronic	Electronic
Temperature Limits	33-120°F	33-120°F
Water Pressure Limits	20-120 psi	20-120 psi
Electrical Requirements	24V/60 Hz	24V/60 Hz
Electrical Power Consumption, Min./Max.	3 Watts/35 Watts	3 Watts/35 Watts
FILTR-CLEER®		
Rated Service Flow	7.8 gpm	9.0 gpm
@ Initial Pressure Drop	@ 15 psi	@ 15 psi
Minimum Practical Filtration Size	10 microns	10 microns
Maximum Particulate Matter	150 NTU	150 NTU
Maximum Suspended Solids	150 mg/L	150 mg/L
Drain Flow, Maximum[3]	4.5 gpm	7.0 gpm
pH Limitation	6.0 - 9.5	6.0 - 9.5
Recharge Time[4]	80 min.	80 min.
Recharge Water Consumption, Av.[5]	100 gal.	115 gal.
Freeboard[2]	10.5 ± 1 inches	11.5 ± 1 inches
Height Overall	51 in.	63 in.
CULLAR®		
Rated Service Flow	4.0 gpm	4.0 gpm
@ Pressure Drop	@ 5.0 psi	@ 5.0 psi
Drain Flow, Maximum[3]	2 gpm	5.5 gpm
pH Limitation	5.0 - 11.0	5.0 - 11.0
Recharge Time[4]	80 min.	80 min.
Recharge Water Consumption, Av.[5]	53 gal.	83 gal.
Cullar Media Volume	0.75 cu. ft.	1.0 cu. ft.
Cullsan® Underbedding Media Amount	10 lbs. (.1 ft^3)	20 lbs. (.2 ft^3)
Freeboard[2]	14 ± 1 inches	24 ± 1 inches
Height Overall	51 in.	63 in.
Rated Capacity	100,000 gallons	130,000 gallons
CULLNEU®		
Rated Service Flow	2.7 gpm	4.0 gpm
@ Pressure Drop	@ 4 psi	@ 4.0 psi
Drain Flow, Maximum[3]	3.5 gpm	5.5 gpm
pH Limitation*	5.8 - 6.2	5.8 - 6.2
Recharge Time[4]	80 min.	80 min.
Recharge Water Consumption, Av.[5]	53 gal.	83 gal.
Cullneu Media Volume	1.0 cu. ft.	1.5 cu. ft.
Freeboard[2]	11 ± 1 inches	21 ± 1 inches
Height Overall	51 in.	63 in.

1 Bottom of tank to top of tank fittings.
2 Top of media to top of inlet fitting.
3 Backwash at 120 psi line pressure.
4 Factory setting.
5 At factory setting and 120 psi line pressure.
6 Top of media to back top edge of port openings.
*NOTE: Under dynamic conditions, it may be necessary to mix five parts Cullneu with one part Cullneu C to effectively raise the pH.

Component Description

CONTROL VALVE ASSEMBLY

The reliable Power Valve directs the flow of water during recharge. Constructed of durable, non-corroding materials, the piston-operated design assures positive, accurate positioning even on turbid problem water supplies. Time and frequency of recharge are controlled by an adjustable, yet simple, circuit board. The circuit board can be adjusted to suit a wide range of water types and family sizes.

MEDIA TANK

The media tank contains the outlet manifold.

NOTICE: *The media tank assemblies do not contain filter media, which is shipped separately. See the section on Installation Procedure (Page 10).*

BYPASS VALVE

Includes the Cul-Flo-Valv®, interconnecting coupling and screws necessary for assembly.

Preparation

The success of the installation will depend to a great extent on advance planning and preparation. Careful attention to the unit's location, accessibility to electrical and drain facilities, and the availability of the proper tools will ensure a professional looking installation. Of utmost importance is the assurance that the filter has been properly applied and meets all specifications.

APPLICATION

Correct application is directly associated with the performance and life expectancy of any water conditioner. It is important, therefore, to understand how your Culligan® Water Filter functions, and to know its capabilities and limitations so that a correct application can be made. By following the guidelines and recommendations set forth in this manual, you can be certain your conditioner is applied correctly.

FILTR-CLEER®

The Filtr-Cleer Automatic Water Filter is capable of removing particulate matter down to 10 microns particle size. It will not remove color, organics, collodial turbidity or dissolved solids. Some applications follow:

- Removal of suspended matters in any water system.
- Removal of particulate matter, such as clay, mud, etc.
- Prefiltration of oxidized iron ahead of an automatic or manual softener.
- Removal of light sand. NOTICE: *If sands cannot be removed from the Filtr-Cleer tank during backwashing, a sand trap should be installed.*
- After the retention tank when a Cul-Cleer® system is used to correct hydrogen sulfide or collodial suspension problems.

The quality and number of gallons filtered water between backwashes will depend upon the amount, type, and size of the particulate matter being filtered. If a water sample is sent to our laboratory, where application of a Filtr-Cleer unit is contemplated, write "Filtr-Cleer Analysis" on the sample tag. Send an additional sample of water for a standard water analysis. The laboratory will test for Nephelometric Turbidity Units (NTU) and suspended solids (mg/L). The sample will also be filtered through 10 micron filter paper and NTU run on a filtered sample. If the NTU of the raw water exceeds 150, suspended solids exceed 150 mg/L or the filtered water through the 10 micron filter paper is of an unacceptable quality, a Filtr-Cleer filter may not be applicable. As a guide, the U.S. Public Health Drinking Water standards states the turbidity should not exceed 1 NTU. The exact number of gallons filtered between backwashes cannot be given because of many variables.

CULLAR® FILTER

Automatic Water Filter with Cullar Media will control chlorine and other common bad tastes and odors, and will also remove most objectional organic colors. It will not remove hydrogen sulfide. It is important to note that whenever the cause of an objectionable taste or odor has not been established, Health Authorities should determine if water is safe to drink. If bacterial contamination is present, a Cul-Cleer system is indicated. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

CULLNEU® FILTER

Automatic Water Filter with Cullneu Media will neutralize slightly acid water (pH of 5.8 or 6.2) and thus help to prevent unsightly brown or green stains due to corrosion of household plumbing. If the pH is from 5 to 6, 1 part of Cullneu C media should be mixed with 5 parts of Cullneu media to provide additional neutralizing capability. If the water to be treated has a pH less than 5, a high hardness, or a high carbon dioxide level, Cullneu may not be applicable; a solution feeder should be used. Since Cullneu adds hardness, it should be used prior to a softener. NOTICE: *Under dynamic conditions it may be necessary to mix 5 parts Cullneu with 1 part Cullneu C to effectively raise the pH.*

In order to size and apply the equipment correctly, a complete analysis of the water supply should be obtained. This can best be accomplished by contacting the local Culligan dealer, who will be able to test the water supply right at the site, or arrange to have one or more water samples sent to the Culligan laboratory for a more detailed analysis.

Culligan water filters may be applied alone or in conjunction with other equipment. They should only be applied, however, within the specifications listed in this manual. These specifications establish the boundaries within which the conditioner will perform most efficiently.

PN 00-3044-50
FIG. 1

PRESSURE

The conditioner is designed to operate within a pressure range of 20 to 120 psi. Pressures below 20 psi may cause the unit to perform and recharge inefficiently, while pressures above 120 psi can cause damage and noisy operation of the control valve.

Low pressure is generally not a problem with municipal water supplies, although some adjustments of the well pump system may be required on private supplies. Although uncommon, some municipal supplies may exceed the high pressure limit. A pressure reducing valve should be installed if such pressures are encountered. Keep in mind, also, that some municipal supplies have higher pressure during nighttime hours.

Check the available water pressure with a gauge assembly to determine what adjustments, if any, are necessary (Figure 1). Place the gauge on a raw water line and open a nearby faucet. Adjust the faucet until the flow is about 5 gallons per minute and check the pressure. In the case of a private well system, allow water to run until the pump cuts in. If the pressure is less than 20 psi at this point, adjust the pump pressure switch as required to raise the cut-in pressure above 20 psi.

PRESSURE DROP

Whenever water is flowing, a certain amount of pressure is lost due to resistance from pipe, fittings, and appliances connected to the water supply. The amount of pressure drop encountered depends on how fast the water is flowing and how much resistance it meets. The amount of pressure available at a tap is also determined by its height above the source of the supply. For example, if water pressure in the basement is 50 psi, it will be about 45 psi on the ground floor, and about 40 psi on the second floor, or a reduction of about 5 psi for every 10 feet of elevation.

Particularly in the case of private water supplies, it may be necessary to increase the pump pressure to overcome pressure drop through the conditioner so that adequate pressure is available at all taps.

As the filter bed becomes loaded with the particulate matter it has removed, pressure drop will increase. The filter must be backwashed when the pressure drop reaches unacceptable levels. The filter should always be installed prior to the water heater.

LOCATION

The location in which the filter is placed should be selected on the basis of the following factors. If at all possible, lines normally requiring unconditioned water should be bypassed (Figure 2). This may not be practical, however, in all cases.

TEMPERATURE

Temperature is an important consideration. The filter should be installed in an area protected from extremes in temperature. Do not allow the filter to freeze, but at the same time do not install it directly adjacent to furnace or water heater, or in an area where it may be exposed to direct sunlight. An outdoor location is not recommended unless the conditioner is protected from rain, blowing sand and dust, and temperature extremes.

ELECTRICAL REQUIREMENTS AND POWER CONSUMPTION

The unit should be located near an electrical outlet, preferably one not controlled by a switch which could accidentally be turned off. The control is provided with a 10-foot cord with a wall mount transformer and should be plugged into a grounded receptacle.

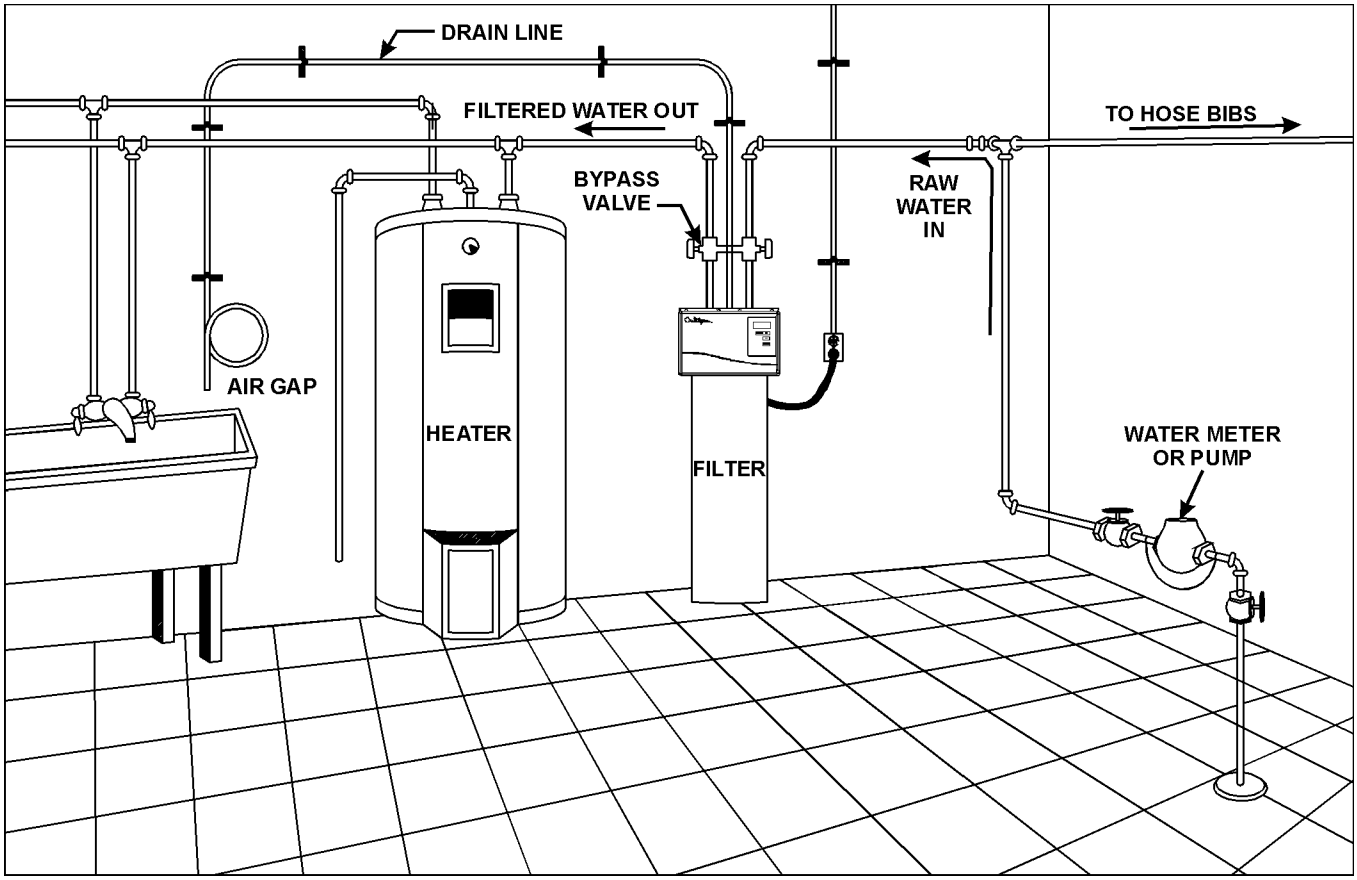


FIG. 2

When producing filtered water, the unit will use about 3 watts of electricity — this is required for the circuit board. Even during recharge, however, the unit will consume no more than about 35 watts, or a little more than half the electricity of a 60 watt light bulb.

DRAIN REQUIREMENTS

An open, free-flowing drain capable of carrying the maximum drain flow rate may be used. This may take the form of a floor drain, utility sink, or stand pipe. Most plumbing codes, however, require an air gap at the discharge of the drain line to prevent possible back-siphoning of drain contents. Refer to the Drain Line Chart table 1, page 11, for allowable drain line length.

SPACE REQUIREMENTS

Along with the availability of drainage and electricity, the physical location of the unit must be considered. Six to twelve inches clearance should be provided behind the unit for running plumbing and drain lines, and four feet above the top of the unit for service access. The floor must be level and smooth.

TOOLS AND MATERIALS

The following tools and supplies will be needed, depending on installation method. Observe all applicable codes.

All Installations
- Safety glasses
- Phillips screwdrivers, small and medium tip
- Gauge assembly (PN 00-3044-50 or equivalent)
- Silicone lubricant (PN 00-4715-07 or equivalent) - DO NOT USE PETROLEUM-BASED LUBRICANTS
- A bucket, preferably light-colored
- Towels

Special Tools
- Torch, solder and flux for sweat copper connections
- Threading tools, pipe wrenches and thread sealer for threaded connections
- Saw, solvent and cement for plastic pipe connections

Materials
- Drain line, 1/2" (PN 00-3030-82, gray, semi-flexible; or PN 00-3319-46, black, semi-rigid; or equivalent)
- Thread sealing tape
- Pressure reducing valve (if pressure exceeds 120 psi)
- Pipe and fittings suited to the type of installation
- Plastic pipe (if permitted by local plumbing codes) — saw, solvent cement and rags

If the household plumbing is galvanized and you intend to make the installation with copper, or vice versa, obtain dielectric unions to prevent galvanic (dissimilar metal) corrosion.

All installations will require 1/2" drain line, (PN 00-3030-82, gray, semi-flexible; or PN 00-3319-46, black, rigid). Obtain slightly more than you think you will need to cover for the elevation over doorways and so on.

BYPASS

Although the filter's control valve has a feature which makes unfiltered water available during backwash, a separate manual bypass is recommended to permit unfiltered water to be used in those lines which cannot be bypassed when the filter is plumbed in, or to permit use of water in the event the unit must be removed from service for any reason.

The unit includes a Cul-Flo-Valv® bypass with 3/4" NPT connections, PN 01-0102-38, (Figure 5). Other available sizes:

Part No.	Description	Size
01012488	Cul-Flo-Valv Bypass	3/4-inch Sweat
01010237	Cul-Flo-Valv Bypass	1-inch NPT

Filling Procedure

FILTR-CLEER® WATER FILTER

The 8" Filtr-Cleer filters are shipped with one media pack and the 10" Filtr-Cleer filters are shipped with two media packs. Verify that the proper number of media packs are on site before loading the tank. Place the manifold inside the tank. Position the tip of the manifold in the recess located in the bottom of the tank.

- Cover the top of the manifold with a clean rag.
- Place a wide-mouth funnel in the tank opening.
- Open the media pack(s) by cutting along the bottom of the carton and lifting up to expose the four individual media packages (Figure 3). Notice: *The performance of the filter may be severely affected if the media are not added in the proper sequence shown.*
- With no water in the tank, slowly pour the Cullsan® media into the tank. Note: The 10" filter requires the Cullsan U from both of the media packs. Shake tank to level the media.
- With no water in the tank, slowly pour the Cullsan G-50 media into the tank and level. Note: The 10: filter requires the Cullsan G-50 from both of the media packs.
- With no water in the tank, slowly pour the Cullsan A media into the tank and level. Note: The 10" filter requires the Cullsan A from both of the media packs.
- Slowly pour the Cullcite® media into the tank and level. Note: The 10" filter requires the Cullcite from both of the media packs.

CULLAR® FILTERS

Cullar filters are shipped with one cubic foot of carbon and a 20 lb bag of Cullsan underbedding. Verify that the proper amount of media is on site before loading the tank.

- Place the manifold inside the tank. Position the tip of the manifold in the recess located in the bottom of the tank.
- Cover the top of the manifold with a clean rag.
- Place a wide mouth funnel in the tank opening.
- Open the bag of Cullsan underbedding. On 8" Cullar units, slowly pour approximately half the contents of the bag into the tank. On 10" Cullar units, pour the entire contents into the tank. Shake the tank to level the media.
- Open the bag of carbon. On 8" Cullar units, slowly pour the carbon into the tank via the funnel until the carbon is within 13" - 14" of the top of the tank. On 10" Cullar units, slowly pour the entire contents of the bag into the tank. Shake the tank to level the media.
- Remove the rag from the manifold.
- Fill the tank with water and allow the media to soak for 24-48 hours. The water level in the tank will decrease as the media soaks up water. Add water to the tank to keep the media submerged so all of the media gets saturated.

CULLNEU® FILTERS

Cullneu filters are shipped with 2 bags of Cullneu with 8" filters and 3 bags of Cullneu with 10" filters. Verify that the proper amount of media is on site before loading.

- Place the manifold inside the tank. Position the tip of the manifold in the recess located in the bottom of the tank.
- Cover the top of the manifold with a clean rag.
- Place a wide mouth funnel in the tank opening. The Cullneu media should be added with no water in the tank.
- For 8" Cullneu filters, slowly pour the entire contents of one bag of media and enough media from the second bag to raise the level of media in the tank to within 11" of the top of the tank.
- For 10" Cullneu filters, slowly pour the entire contents of two bags of media and enough media from the third bag to raise the level of media in the tanks to within 21" of the top of the tank.

DO NOT OVERFILL. Overfilling will result in excess media being lost to drain during backwash, possibly plugging the control valve. Shake the tank to level the media.

MEDIA-PAK
FIG. 3

Installation

PLACEMENT

Refer to Fig. 2.

- Set the media tank on a solid, level surface near water, drain and electrical facilities. Place the outlet (black coupling) of the tank on the left.

INSTALL DECALS

Locate the data plate decals and model decals packed with the control valve. Adhere them to the cover and backplate as shown in Figs. 4 and 5.

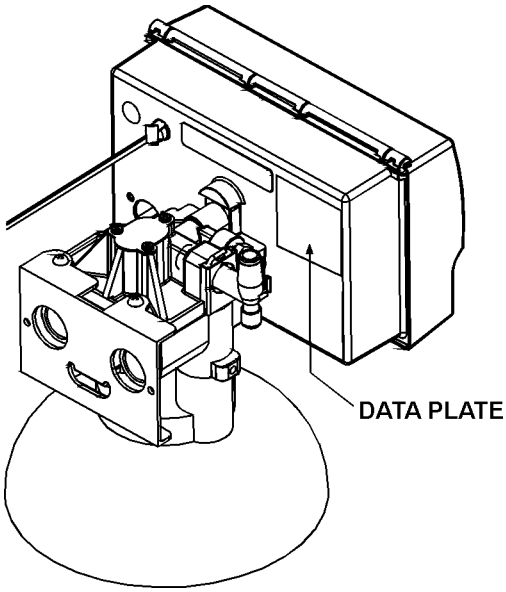


FIG. 4

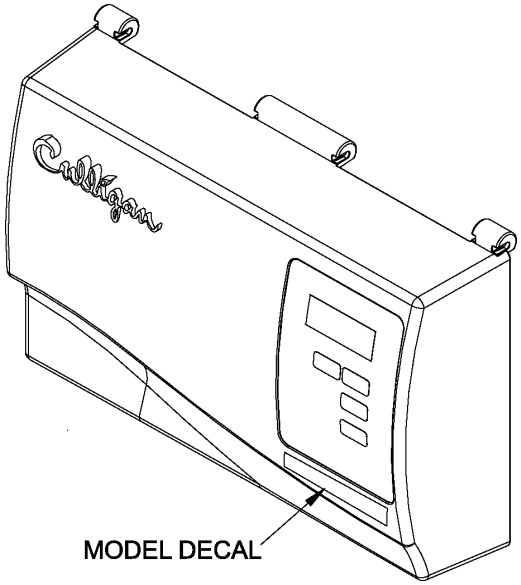


FIG. 5

MOUNT THE CONTROL VALVE

Assemble the control valve to the media tank as follows, See Fig. 6.

1. Lubricate the O-ring sealing area of the adapter and of the tank with silicone grease. NOTICE: *Do not use a petroleum base lubricant, for this will cause swelling of the rubber parts.*

2. Remove the large O-ring from the parts pack (located in the tank adapter carton) and assemble the O-ring onto the adapter. Be sure that the O-ring is fully seated against the flat undersurface of the adapter.

3. Lubricate the large O-ring and the outlet manifold O-ring with silicone grease.

4. Thread the valve adapter into the tank, making certain that the outlet manifold fits securely into the manifold O-ring. A strong hand-tight assembly is sufficient to provide a leak-free seal.

5. NOTICE: *The black molded tank adapter is marked with "IN" and "OUT", corresponding to the inlet and outlet of the tank. Position the tank with the inlet coupling on the right and the outlet coupling on the left. Lubricate the two O-rings of the tank couplings with silicone lubricant.*

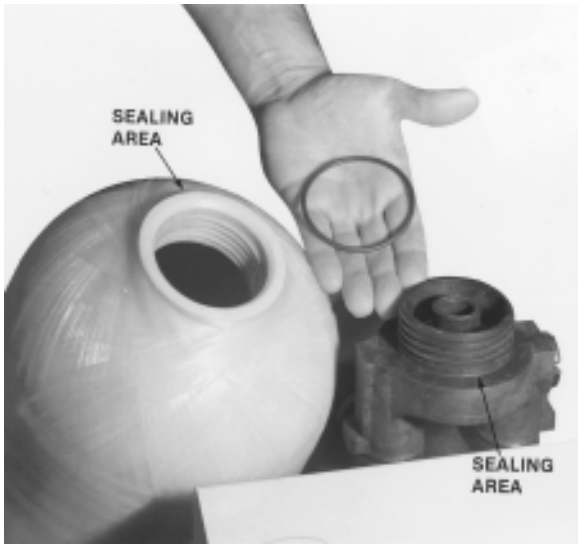


FIG. 6

6. The control valve is marked also with "IN" and "OUT" (Figure 7). Place the control onto the tank with the inlet and outlet of the control corresponding with the inlet and outlet of the tank. Press firmly onto the couplings.

7. Locate the two U-clamps and screws in the small parts package. Install the clamps on both sides of the control as indicated in Figure 8 and secure them with the screws.

INSTALL THE FLOW CONTROL

As shipped from the factory, each control is equipped with a 2 gpm flow control for 8" Cullar® filters. Additional flow controls are included with each unit for conversion for use with other filter tanks. Refer to Table 1 to select the proper flow control. NOTICE: *To prevent injury, convert units to the proper flow control prior to installation.*

TABLE 1

Filter	Flow Control	Color
8" Cullar	2.0 gpm	Brown
10" Cullar	5.5 gpm	Black
8" Cullneu®	3.5 gpm	Green
10" Cullneu	5.5 gpm	Black
8" Filtr-Cleer®	4.5 gpm	Red
10" Filtr-Cleer	7.0 gpm*	Black (Thin)

* Use with flow control spacer provided.

For backwash flow control conversion, refer to Figure 7 and instructions listed below.
- Remove the u-clip of the drain elbow assembly and pull the drain elbow straight off.
- Remove the back wash flow control located behind the elbow. Put the correct restrictor in its place.

Insert the flow control washer with the molded numbers facing toward the valve body. Refer to Table 1. For the 5.5 gpm flow control, insert the flow control with the molded "5.5" facing away from the valve body. Insert the plastic flow control spacer after the 7 gpm flow control washer on the 10" Filtr-Cleer. See Figure 5.
- Replace the drain elbow assembly and secure it with the u-clip.

PLUMBING CONNECTIONS

Two methods of connecting the water filter to the plumbing system are available. Shipped with each filter is a Culligan® Cul-Flo-Valv® bypass valve, either PN 01-0124-88 or PN 01-0102-38. If local conditions warrant, you may use the sweat adaptor kits, PN 00-3314-44 or PN 00-3314-45.

⚠ CAUTION: ***Close the inlet supply line and relieve system pressure before cutting into the plumbing! Flooding could result!***

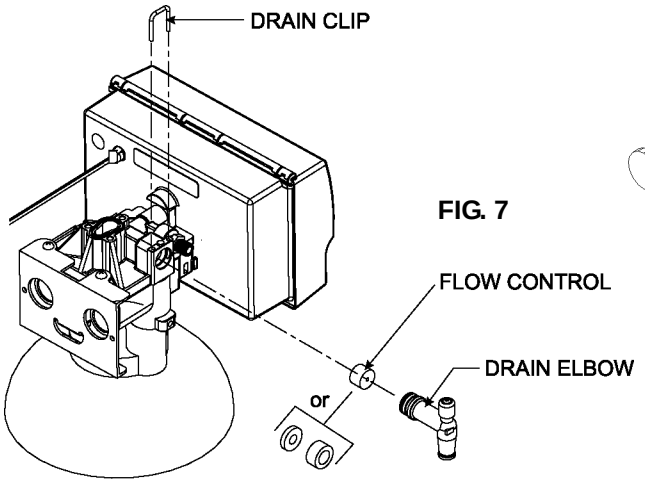


FIG. 7

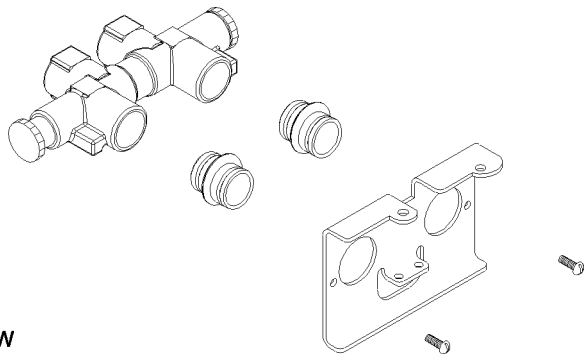


FIG. 8

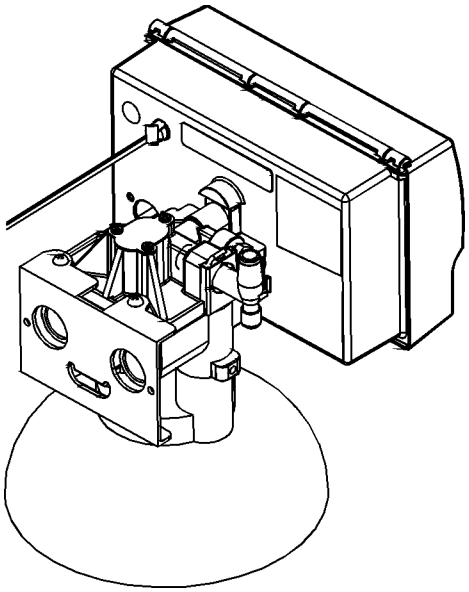


FIG. 9

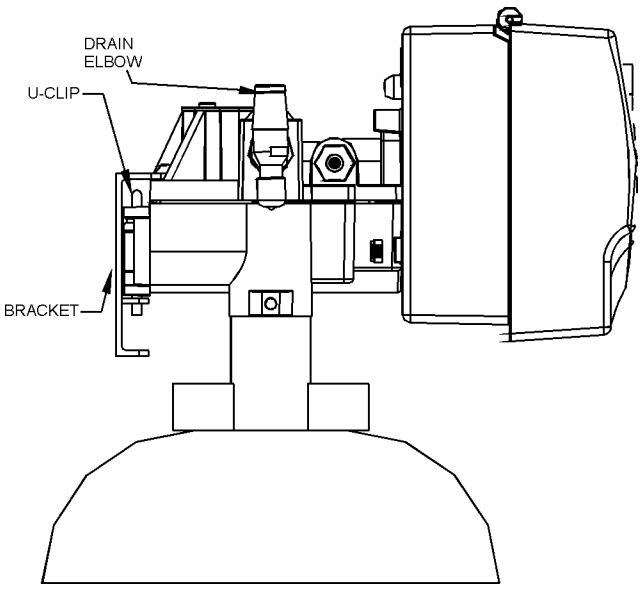


FIG. 10

⚠ CAUTION: ***When making sweat connections, remove all plastic and rubber components which contact brass or copper. Damage to these components may result when not removed.***

BYPASS VALVE INSTALLATION

The bypass valve connects directly to the backplate of the valve with a pair of screws (Figure 8). To facilitate this connection, remove the plate by pulling up on the u-clip on the back of the valve. Lubricate all o-rings with silicon lubricant.

⚠ CAUTION: ***When reinstalling back plate to control valve, make sure the u-clip fully engages the two bottom holes of the bracket (Figure 9). Secure bracket from the top with the two mounting screws provided.***

SWEAT ADAPTOR INSTALLATION

The sweat adaptors use a snap ring to hold them to the backplate of the control valve. The back plate will need to be removed from the valve for this connection. A pair of snap ring pliers, PN 00-5916-09, are needed for this connection.

DRAIN LINE CONNECTION

Refer to Figure 10 and Table 2, under the applicable tank size for drain line length and height limitations.

- Remove 1/2" pipe clamp from end of drain elbow.
- 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 the drain to prevent its movement during regeneration. A loop in the end of the tube will keep it filled with water and will reduce splashing at the beginning of each regeneration.

NOTICE: *Observe all plumbing codes. Most codes require an anti-siphon device or air gap at the discharge point!*

TABLE 2

CULLIGAN® AUTOMATIC WATER FILTERS — 8-INCH

Average Water Pressure	Height of Drain Discharge Above Floor on Which Filter Sets										
psi	4"	1 ft.	2 ft.	3 ft.	4 ft.	5 ft.	6 ft.	7 ft.	8 ft.	9 ft.	10 ft.
30	56	50	40	30	20	10					
50	112	106	96	86	76	66	56	46	36	26	16
70	143	137	127	117	107	97	87	77	67	57	47
90	153	147	137	127	117	107	97	87	77	67	57
120	159	153	143	133	123	113	103	93	83	73	63

CULLIGAN® AUTOMATIC WATER FILTERS — 10-INCH

Average Water Pressure	Height of Drain Discharge Above Floor on Which Filter Sets										
psi	4"	1 ft.	2 ft.	3 ft.	4 ft.	5 ft.	6 ft.	7 ft.	8 ft.	9 ft.	10 ft.
30	44	38	28	18							
50	103	97	87	77	67	57	47	37	27	17	7
70	129	123	113	103	93	83	73	63	53	43	33
90	145	139	129	119	109	99	89	79	69	59	49
120	153	147	137	127	117	107	97	87	77	67	57

ELECTRICAL CONNECTIONS

The power cord needs to be connected to the plug-in transformer, wire orientation is not critical. Figure 11 shows the cord attachment to the transformer.

NOTICE: *Observe all state and local electrical codes.*

NOTICE: *The plug-in transformer is rated for indoor installations only.*

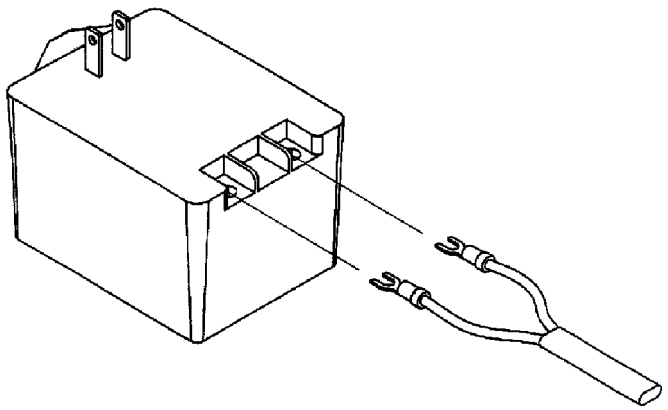


FIG. 11

Settings

Your Culligan® Automatic Water Filter is designed to perform efficiently on a wide range of water supplies. Before the unit can be recharged and put into service, several settings must be made.

BACKWASH

Backwash expands and loosens the media bed, and flushes away accumulated particulate matter. The backwash interval is preset at the factory for 10 minutes, which is adequate for most water supplies. It is recommended that backwash last just long enough so that the effluent from the drain line is clear. Backwash too long and water is wasted, not long enough and the tank becomes fouled with sediment. Refer to the Programming section to increase or decrease the backwash interval.

PAUSE CYCLE

The Automatic Water Filter shares its timer with other water conditioning products which would use this period for the eduction and rinsing of salt, or other regenerant chemical. The pause cycle time is 1 minute.

RAPID RINSE

Rapid rinse settles and compacts the media after backwashing and flushes any residual particulate matter from the bottom of the filter bed before returning the filter to service. Rapid rinse is set at the factory at 10 minutes. It may be extended, if desired. Refer to the Programming section to increase or decrease the rapid rinse interval.

Make sure the inlet water supply is turned off, then supply power to the timer. The display will power up flashing "12:00 PM" and the motor will energize and cycle the control, without stopping, to the home position. This is required to ensure that the control is in the home position.

FIG. 12 - Circuit Board Display

The timer uses four buttons:

1. STATUS: Advance timer through display options.
2. PLUS SIGN "+": Increase the setting.
3. MINUS SIGN "-": Decrease the setting.
4. REGEN.: Initiate a manual regeneration.

PROGRAMMING THE OPTION SETTINGS

The microprocessor has several programming options that can be changed for various additional functions. Listed are the functions for the programming options used on the Culligan Medallist Series™ control.

Dip Switch	Function	Default Position
1	Service or Test	Service
2	Delay or Immediate Regeneration	Delayed Regeneration
3	Softener or Filter	Softener
4	Time Clock Backup	OFF
5	English or Metric	English
6	3/4" or 1" Meter	3/4" Meter

IMPORTANT:
The Medallist control is shipped from the factory in the softener mode. The program setting must be changed from the softener mode to the filter mode - see step number 3.

1 Service or Test Mode

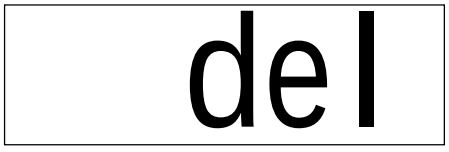
Press and hold the “STATUS” key until “dIP1” appears in the display. “dIP1” will blink for 3 seconds and then the display will show the status of this option (SEr or tES). Toggle the feature with the “+” or “-” key.

Note: Pressing “STATUS” after changing option to test mode will place the control in test mode. After testing is complete press and hold “STATUS” for 3 seconds to return to service. Placing the unit in test mode will not change any of the programmed values (Refer to the service manual for test menu).

2 Delay or Immediate Regeneration

Press the “STATUS” key. The display will blink “dIP2” for 3 seconds and then show the current status. Toggle between “DEL” (Delay) and “Id” (Immediate) with the “+” or “-” key.

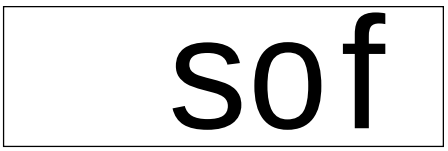
Note: Changing this setting will not change any of theprogrammed value with the exception that Step #2, time ofregeneration will be ignored when set to immediate.



3 Softener or Filter

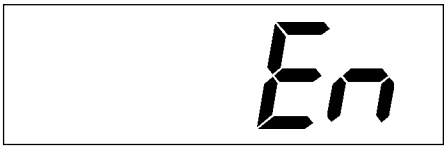
Press the “STATUS” key. The display will blink “dIP3” for 3 seconds and then show the current status. Toggle between “SOF” (Softener) and “FIL” (Filter) with the “+” or “-” key.

Note: Changing this setting will cause the unit to load the Filter or Softener defaults.



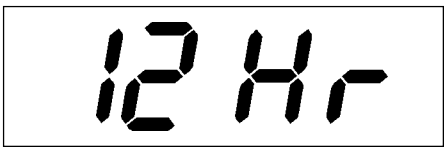
4 English or Metric

Press the “STATUS” key. The display will blink “dIP5” for 3 seconds and then show the current status. Toggle between “En” (English units) and “MET” (Metric units) with the “+” or “-” key.



5 12 or 24 Hour Clock

Press the “STATUS” key. The display will blink “dIP6” for 3 seconds and then show the current status. Toggle between “12 Hr” (12 hour clock) and “24 Hr” (24 hour clock) with the “+” or “-” key.

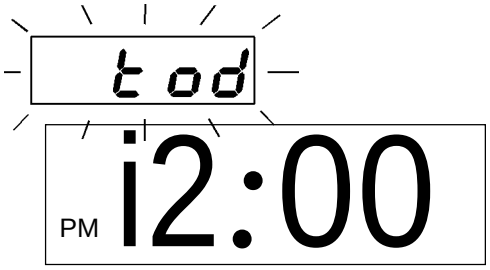


SETTING THE MICROPROCESSOR

The microprocessor senses when it is installed as a Soft-Minder® control. **Adding or removing any connection to the board will automatically reset the microprocessor to the factory settings.**

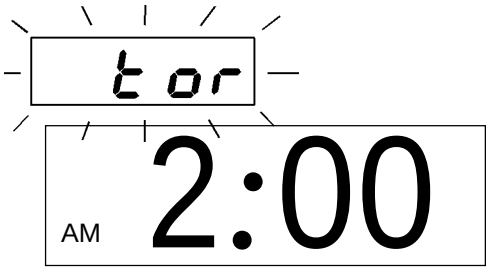
Step 1 – Programming Time of Day

Press the “STATUS” key.
The display will blink “tod” for 3 seconds and then change to time of day with the “ones” digit blinking.
Adjust the “ones” digit with the “+” or “-” keys.
Press the “REG” key to blink the “tens” digit.
Adjust the “tens” digit with the “+” or “-” keys.
Press the “REG” key to blink the “hours” digit.
Adjust the “hours” digit with the “+” or “-” keys.
Press the “REG” key to cycle back to “ones” or
Note: *The “hours” setting scrolls through 1-12 AM and 1-12 PM. Make sure the proper AM or PM indicator is shown when setting the time.*



Step 2 – Programming Regeneration Time

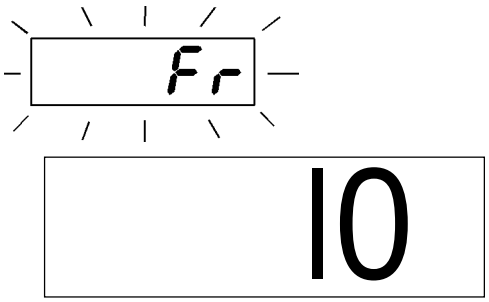
Press the “STATUS” key after setting the time of day.
The display will blink “tor” for 3 seconds and then change to the time setting with the “ones” digit blinking.
Adjust regeneration time as time of day above.
Note: This option will not show if the “dIP 2” option is set to immediate



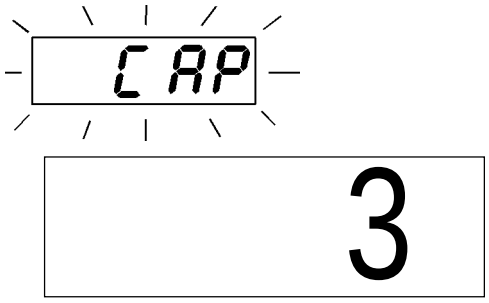
Step 3 – Programming Backwash Time

Press the “STATUS” key after setting regeneration time.
The display will blink “bw” for 3 seconds and then display the backwash time in minutes.
Adjust the setting with “+” or “-” key. (1-40 minutes)

Step 4 – Programming Fast Rinse Time
Press the “STATUS” key after progamming the backwash time. The display will blink “Fr” for 3 seconds and then display the Fast Rinse Time in minutes.
Adjust the setting with “+” or “-” key. (5-30 minutes)

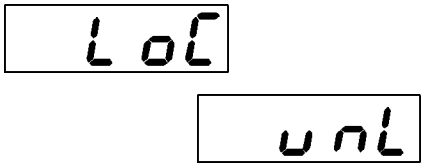


Step 5 – Days to Regeneration
Press the “STATUS” key after programming the fast rinse time. The display will blink “CAP” for 3 seconds and then display the number of days between regenerations.
Adjust the setting with the “+” or “-” key. (1-42 days)



Exiting Program Mode
From Step 5 press the “STATUS” key.
The display will go blank.
Press the “STATUS” key again to exit programming.
Note: *The control will exit the programming mode if no key press activity takes place within one minute.*

Locking the Programmed Menu
Press and hold the “+” key for 3 seconds while in the service mode. The display will show the status of the lock feature. (“LoC” or “unL”)
Adjust with the “+” or “-“ key.
Press the “STATUS” key to return to the service mode.
Note: *While the programmed menu is locked (“LoC”) all of the programming menu items will display, however only the time of day can be changed.*

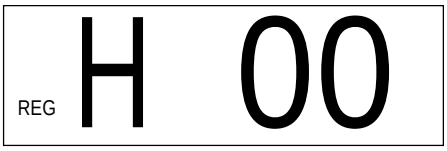


Note: *If programming times out, values will not be saved. The “Status” key must be pressed to save values.*

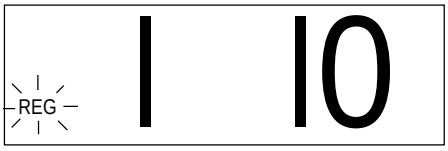
Manual Cycling

The Culligan® microprocessor can be indexed through the various regeneration steps. For all steps, the cycle numbers do not appear, or change, until the motor stops.

1. Press the status button to move past the programming steps until the display is blank. From blank display press the “+” key. An "H" will appear in the display. The control is in the HOME position.

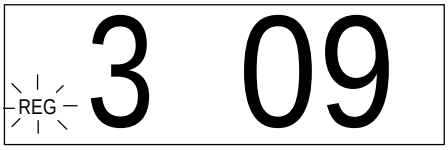


2. Press and hold the regen button. The 'REGEN' icon will blink, and the motor will advance the control. A '1' will appear. The unit is now in the BACKWASH position. The numbers to the right indicates the time remaining for the cycle.

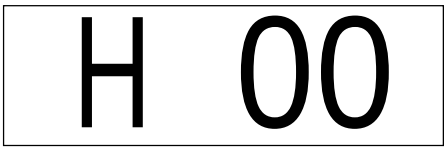


3. Press the “+” key. A '2' will appear in the display, along with the cycle time remaining. The control is in the PAUSE cycle.

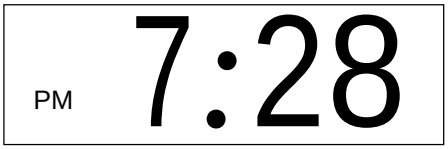
4. Press “+” key. A '3' will appear in the display, along with the cycle time remaining. The control is now in the FAST RINSE cycle. Note: The time displayed is rounded down to the closest minute.



5. Press the “+” key. An 'H' will appear in the display. The unit is in the HOME position. The 'REGEN' enunciator is no longer blinking.



6. Press the status key. Time-of-Day appears in the display.



Note: If the “+” key is pressed to cycle the value from position “3” to “Home”, the # regen counters will not be updated.

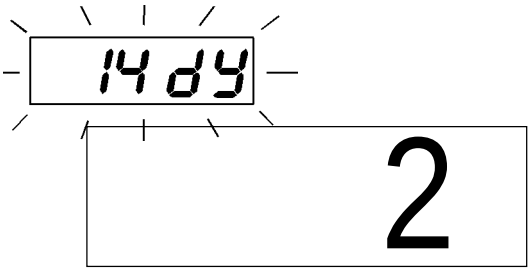
Service Check

The service mode allows one to view the number of regenerations in the past 14 days, the total number of regenerations the control has cycled through and the number of days since the last regeneration.

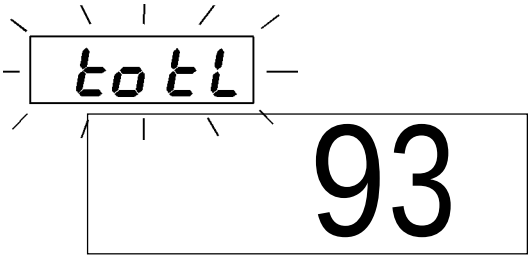
To enter the service check mode, follow these steps:

1. From the Blank display:

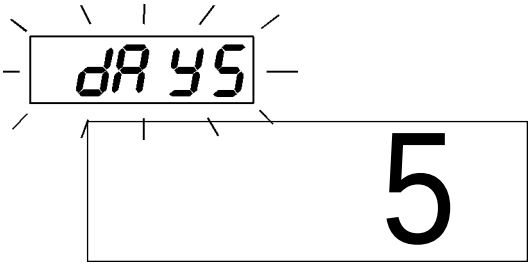
2. Press the "-" key. The disply will blink "14dY" for 3 seconds and then display the number of regenerations that have occurred in the last 14 days.



3. Press the "-" key. The display will blink "totL" for 3 seconds and then display the total number of regenerations this control has cycled through.



4. Press the "-" key. The display will blink "daYS" for 3 seconds and then display the number of days since last regeneration.



Note: Pressing the "+" key at any time brings back to manual cycling. Pressing "Status" will Exit the programming menu.

Start-Up Procedure

CULLAR® AND CULLNEU® WATER FILTERS

- Connect the transformer to a grounded, 120 Volt, 60 Hertz outlet.
- Initiate an extra recharge by pressing and holding the "REGEN" button for approximately 3 seconds.
- SLOWLY place the bypass valve(s) in the service position.

⚠ CAUTION: ***If a sudden rush of water enters the conditioner, some of the media could be thrown up into the control valve.***

- Place the filter in bypass as soon as water is observed flowing to drain, place the timer in the service position (refer to the SERVICE POSITION paragraphs in the SETTINGS section) and unplug the control.
- Allow the media to soak for 24 to 48 hours for Cullar and Cullneu models.
- Set the timer to the correct time of recharge and time of day, place the bypass valve(s) in the service position, and plug in the power cord.

FILTR-CLEER® WATER FILTER

- Connect the transformer to a grounded, 120 Volt, 60 Hertz outlet.
- Set the timer to the correct time of recharge and time of day.
- Initiate an extra recharge by pressing and holding the "REGEN" button for approximately 3 seconds.
- SLOWLY place the bypass valve(s) in the service position.

⚠ CAUTION: ***If a sudden rush of water enters the conditioner, some of the media could be thrown up into the control valve.***

During the backwash cycle, unfiltered water will be available to all the lines in the household.

⚠ WARNING: ALTHOUGH NOT NORMALLY NECESSARY, SHOULD YOU NEED TO DISASSEMBLE ANY PART OF THE CONTROL VALVE OR REMOVE THE CONTROL FROM THE TANK ASSEMBLY OR ASSOCIATED PLUMBING, DEPRESSURIZE THE UNIT FIRST CLOSING THE MAIN SUPPLY VALVE, THEN OPEN A CONVENIENT FAUCET DOWN STREAM FROM THE WATER CONDITIONER.

During the recharge cycle, unfiltered water will be available to all the lines in the household. Immediately following recharge, the water to service will be filtered.

CULLNEU® WATER FILTER REFILL

As water passes through the Cullneu Water Filter, the media slowly dissolves and neutralizes the water. The rate at which the Cullneu media dissolves depends on a number of factors such as temperature, flow rate, and pH. Because these factors are so variable, it is difficult to determine how often new Cullneu media should be added. Tables 4 and 5 show the recommended intervals for inspection and replenishment of Cullneu mineral. The following procedure should be used to determine when new media should be added.

- Press and hold the "REGEN" button for approximately 3 seconds. Allow the control to move to the backwash position. Unplug the control.
- Place the filter in bypass by pushing the red knob of the Cul-Flo-Valv® bypass fully inward or by closing the inlet and outlet valves and opening the bypass valve (three valve bypass).
- Remove the Refill Port from the port opening for 10" tank. For 8" tanks, the control must be removed.

⚠ WARNING! SOME WATER SUPPLIES CONTAIN POTENTIALLY HAZARDOUS GASES. DO NOT INSPECT THE INTERIOR OF THE TANK USING A SPARK OR HEAT SOURCE, OR AN EXPLOSION MAY RESULT!

- Using a yardstick, measure the distance between the top of the media and the back top edge of the port opening (this distance is the freeboard). For eight-inch units, if the freeboard is greater than 17 inches, add enough Cullneu media to decrease the freeboard to 11 inches. For ten-inch units, if the freeboard is greater than 27 inches, add enough Cullneu media to decrease the freeboard to 21 inches.
- Wipe the port opening free of media and replace the Refill Port. MAKE CERTAIN THE CAP IS SECURELY LOCKED INTO PLACE for 10" tanks. Reassemble the control to the tank for 8" units.
- Place the bypass valve(s) in the service position, plug in the control, and re-set the time of day. Allow the filter to continue the backwash and rinse cycles. The control will then return to the service position.

USE OF BYPASS VALVE

Depending on where the particular installation was made, the outside sill cocks may or may not be served by filtered water. Ideally, all lines not requiring filtered water should be taken off upstream of the filter. This is not always possible, however, due to the construction of the house, or the difficulty or expense of rearranging the piping on older homes.

You should bypass the filter:
- If the outside lines do not bypass the water filter and you do not wish to waste filtered water on lawn sprinkling or other outside uses.
- If no water will be used for several days and you want to save water by not allowing the unit to backwash.
- If you wish to inspect or work on the valve.
- If a water leak from the valve is evident.

CUL-FLO-VALV BYPASS

With the blue knob pushed fully inward (knob up against the barrel of the valve, Figure 6), water is routed through the water filter. Water may be bypassed around the filter by pushing the red knob fully inward. Avoid "slapping" the valve stem when shifting from one position to another.

CARE AND CLEANING

Protect the operation and appearance of the water filter by following these precautions:
- Do not place heavy objects on top of the control valve cover.
- Use only mild soap and warm water to clean the exterior of the unit. Never use harsh abrasive cleaners or compounds which contain acid or bleach.
- Protect the conditioner and drain line from freezing temperatures.
- Reset the timer as soon as possible after any interruption of electrical power to keep the unit on its normal schedule.

TABLE 4

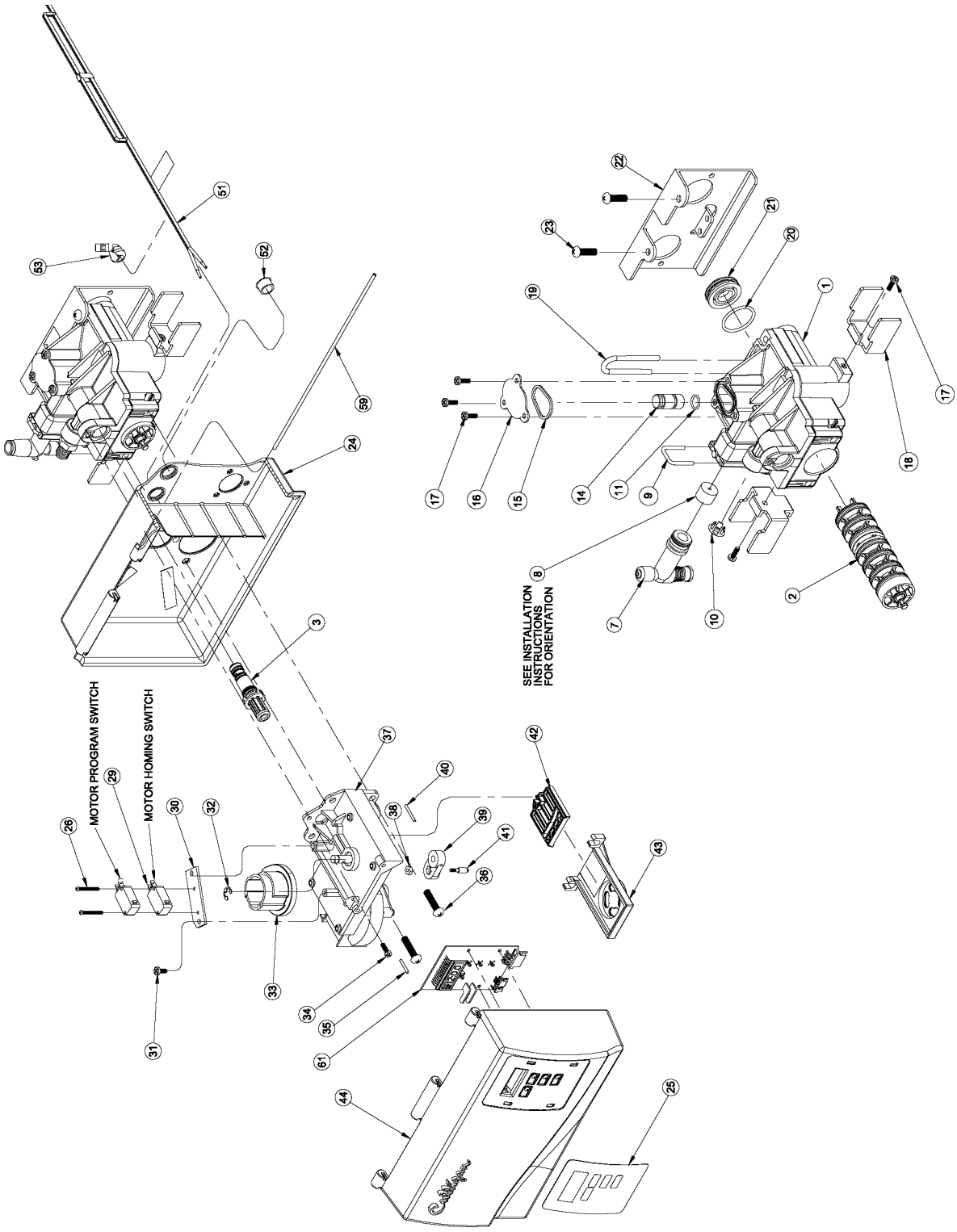
8-INCH NEUTRALIZERS; MINERAL REPLENISHMENT INTERVAL			
CO_2 (GPG)	**2 Persons**	**3**	**4**
	150 gpd	**225**	**300**
3	6		3
4			
5			
6	3		USE CHEMICAL FEED
7			
8			
9			
10			

TABLE 5

10-INCH NEUTRALIZERS; MINERAL REPLENISHMENT INTERVAL					
CO_2 (GPG)	**2 Persons**	**3**	**4**	**5**	**6**
	150 gpd	**225**	**300**	**375**	**450**
3	A	6			
4					
5	6		3		
6					
7					
8					USE CHEMICAL FEED
9					
10					

A - check and replenish annually
6 - check and replenish every 6 months
3 - check and replenish every 3 months

Control Valve



Control Valve

Item	Part No.	Description	Item	Part No.	Description
—	01014409	Control Valve Assembly - Medallist	30	00401040	Switch Bracket
1	00449865	Control Valve	31	00318455	Screw
‡ 2	01013083	Seal Pack Assembly	32	P1013043	Retaining E-Ring (10/Kit)
‡ 3	01001258	Eductor Sleeve Filter	33	01013031	Cam
‡ *	P0447986	O-Ring, Eductor Sleeve, Small O-Ring (25/Kit)	34	01001784	Screw
‡ *	P0308407	O-Ring, Eductor Sleeve, Large O-Ring (25/Kit)	35	00443559	Roll Pin
7	00446835	Drain Elbow Assembly w/O-Ring	36	00318452	Screw
8	P0331635	Flow Control - 2 GPM (8" Cullar®) (10/Kit)	37	01014179	Drive Motor & Bracket Assembly 24V/60Hz
	P0331636	Flow Control - 3.5 GPM (8" Cullneu®) (10/Kit)	38	00318354	Nut
	00331637	Flow Control - 4.5 GPM (8" Filtr-Cleer®)	39	00445221	Bellcrank
	00401031	Flow Control - 5.5 GPM (10" Cullar & 10" Cullneu)	40	00445246	Roll Pin
	A0708008	Flow Control - 7 GPM (10" Filtr-Cleer)	41	01012649	Follower
	01014426	Flow Control Spacer (10" Filtr-Cleer)	42	01012648	Yoke
9	00447387	Retainer, Drain Elbow	43	01012647	Bracket
10	00446475	Plug	44	01014037	Cover
11	00308437	O-ring, Eductor Plug	51	01014083	Power Cord
14	00448669	Plug, Filter Eductor	52	01006498	Plug, Snap-In
‡ 15	00445797	Gasket	53	01000372	Strain Relief
16	00401022	Eductor Port Cover	59	01014038	Hinge, Circuit Board Plate
17	00448687	Screw	61	01014172	Circuit Board
18	01005130	Bracket	*	01012956	Wall Mount Transformer
19	00448128	Retainer, Clip	*	01014076	Wire Harness, Switches & Motor
‡ 20	P0444914	O-Ring, Rear Seal (10/Kit)	*	01014074	Wire Harness, Circuit Board
21	00448126	Rear Body Plug	*	00451701	Hose Clamp, Drain
22	01004689	Cul-Flo Bracket	*	01013839	Back-up Battery
23	P0318383	Screw (10/Kit)			
24	01014036	Back Plate			
25	01882288	Timer Label			
26	00448686	Screw			
‡ 29	01003244	Switch			

‡ Recommended Spare Parts
* Not Illustrated

Conditioner Tank

Item	Part No.	Description
	00441897	Tank, 8" x 44" with Manifold
	01012931	Tank, 10" x 54" with Manifold
	01014021	Tank, 10" x 54" Fillport with Manifold
	01013971	Kit Adapter, 8" Tank
	01013970	Kit Adapter, 10" Tank
	01012931	Replacement Tank, 10" x 54" with Manifold
1	00443282	Coupling (less O-rings)
‡2	P0333957	O-ring (4 required)
3	00444808	Adapter (8" Tank)
	00403523	Adapter (10" Tank)
‡4	00440052	O-ring, 8" Tank
	00308447	O-ring, 10" Tank
5	01000819	Outlet manifold, 8"
	01014020	Outlet manifold, 10" x 54" (Tank with Fillport)
	01012829	Outlet manifold, 10" x 54"
*	P0308427	O-ring (outlet manifold)