Culligan

Culligan® High Efficiency Sulfur-Cleer Water Filter Owners Guide





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.



WARNING!

Electrical shock hazard! Prior to servicing equipment, disconnect power supply to prevent electrical shock.

NOTE

This system is not intended for use where water is microbiologically unsafe or with water of unknown quality.



WARNING!

If incorrectly installed, operated or maintained, this product can cause severe injury. Those who install, operate, or maintain this product should be trained in its proper use, warned of its dangers, and should read the entire manual before attempting to install, operate, or maintain this product.



WARNING!

This device complies with part 15 of the FCC rules subject to the two following conditions: 1) This device may not cause harmful interference, and 2) This device must accept all interference received including interference that may cause undesired operation.

This equipment complies with Part 15 of the FCC rules. Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



CAUTION!

To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.



CAUTION!

This product is not to be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have been given supervision or instruction.



CAUTION!

Children should be instructed not to play with this appliance.



CAUTION!

If the power cord from the transformer to the unit looks or becomes damaged, the cord and transformer should be replaced by a Culligan Service Agent or similarly qualified person in order to avoid a hazard.

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Contents

Thank You
Specifications2
Introduction3
Navigating the Menus and Keypad $\underline{6}$
First Time Setup
Information
Set Date and Time
Regeneration
Care and Cleaning of Your Water Conditioner
Preventive Maintenance
When and How to Bypass Your Water Filter
Things to Check Before You Call for Service
Error Codes
Troubleshooting Guide
Performance Data Sheet. <u>25</u>
High Efficiency 10" Sulfur-Cleer Water Filter
Records and Data
Culligan Limited Warranty
With Culligan You Get More Than A Quality Product



About this Manual

This manual:

- familiarizes the operator with the equipment
- explains installation and setup procedures
- provides basic programming information
- explains the various modes of operation
- gives specifications and troubleshooting information

Read this Manual First

Before you operate the Culligan High Efficiency Sulfur-Cleer Water Filter, read this manual to become familiar with the device and its capabilities.

Safe Practices

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

Notice (or Note) is used to emphasize installation, operation or maintenance information which is important, but does not present any hazard. For example,

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

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



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

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



WARNING! Electrical shock hazard! Unplug the unit before removing the timer mechanism or cover plates!

The CAUTION and WARNING paragraphs are not meant to cover all possible conditions and situations that may occur. Understand that common sense, caution, and careful attention are conditions which cannot be built into the equipment. These MUST be supplied by the personnel installing, operating, or maintaining the system.

Be sure to check and follow the applicable plumbing codes and ordinances when installing this equipment. Local codes may prohibit the discharge of sanitizing or descaling solutions to drain. An extra solution tank should be used to neutralize the solution before discharging to drain.

Use protective clothing and proper face or eye protection equipment when handling chemicals or tools.

NOTE The Culligan High Efficiency Sulfur-Cleer Water Filter is not intended for use with water that is microbiologically unsafe or of unknown quality without adequate disinfection either before or after the system.

NOTE Check with your public works department for applicable local plumbing and sanitation codes. Follow local codes if they differ from the standards used in this manual. To ensure proper and efficient operation of the Culligan High Efficiency Sulfur-Cleer Water Filter to your full satisfaction, carefully follow the instructions in this manual.



Thank You

Welcome To Your New World of Better Living with Culligan Water.

The Culligan High Efficiency Sulfur-Cleer™ 10" fiberglass and Quadra Hull filters have been tested and certified by WQA against NSF/ANSI Standard 372 and NSF/ANSI Standard 42 for the effective reduction of iron up to 1,000 gallons, and WQA Test Protocol 04-001 and NSF/ANSI Standard 42 for the effective reduction of hydrogen sulfide as verified and substantiated by test data.

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.

Congratulations, too, on selecting one of the "first family" of water treatment in the prestigious Culligan High Efficiency Water Filters. 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 filter 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.

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Specifications

	10" Fiberglass	10" Quadrahull
Control Valve	HE Control Valve	HE Control Valve
Timer	Electronic	Electronic
Overall Conditioner Height	69"	69"
Media Tank Dimensions (D x H)	10x54 in.	10x54 in.
Filter Media Type	1.5 ft³ Catalytic Carbon	1.5 ft³ Catalytic Carbon
Underbedding	Cullsan, 20 lbs.	Cullsan, 20 lbs.
Capacity ¹	1000 gallons	1000 gallons
Freeboard ²	18 in	18 in
Max. Clear Water (Soluble) Iron	10 ppm	10 ppm
Max. Hydrogen Sulfide	8 ppm	8 ppm
Minimum Alkalinity	100 ppm	100 ppm
рН	7.0–8.5	7.0–8.5
Service Flow @ Pressure Drop (Clean Bed) Normal ³	5 gpm @ 4 psi	5 gpm @ 4 psi
Maximum		
Operating Pressure	20–60 psi/138–414 kPa	20–60 psi/138–414 kPa
Operating Temperature	33–120° F/1–49°C	33–120° F/1–49°C
Electrical Requirements	120 Volts/60 Hz	120 Volts/60 Hz
Power Consumption, Continuous/Maximum	6 Watts/240 Watts	6 Watts/240 Watts
Drain Flow, Maximum	5.5 gpm	5.5 gpm
Backwash Regeneration Time	1–99 minutes	1–99 minutes
Eduction	1–99 minutes	1–99 minutes
Fast Rinse	1–99 minutes	1–99 minutes

For the purposes of plumbing sizing, only the service flow rate and corresponding pressure drop may be used.

¹Capacity based on 5 gpm (10" unit) and 10 mg/L of dissolved iron.

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

³Max flow rates and pressure drop characteristics have not been certified by the Water Quality Association.



Culligan® High Efficiency Sulfur-Cleer™ is designed to meet the needs of applications for high quality water. This manual contains important information about the unit, including information needed for installation, operating, and maintenance procedures. A troubleshooting section provides a guide for quick and accurate problem solving.

In order for the water treatment system to continue to provide high quality water, you must develop a thorough understanding of the system and its operation. Review this manual before making any attempt to install, operate, or service the system. Installation or maintenance done on this system by an untrained service person can cause major damage to equipment or property damage.



CAUTION! The Sulfur-Cleer system must be supplied with cold water only.

Step 1

Aeration Operation Service Cycle

In the service cycle, raw water enters the inlet port of the medium tank and is directed through the inlet strainer. The oxidation process begins when the water passes through the inlet strainer and cascades through a head of air. This air/ water contact oxidizes the iron and/or hydrogen sulfide in the water. The water is then filtered through the media. It then passes through the outlet of the aeration tank to the inlet of the filter.

Filter Tank Operation Service Cycle

Upon system demand for filtered water, water is directed downward through the media toward the lower manifold. Oxidized iron particles are trapped by the filter bed as the water passes through. Filtered water enters the lower manifold and travels up the manifold to the outlet port on the filter valve.

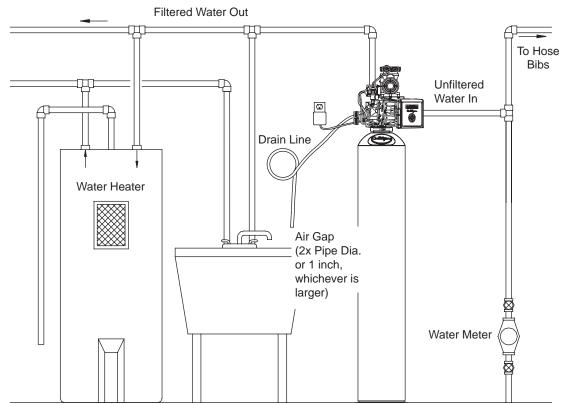


Figure 1. Sulfur-Cleer operating configuration.

Introduction



Step 2

Aeration Operation Air Recharge Cycle

When energized, the air pump sends air through the solenoid valve into one end of the shuttle valve. Once air pressure in the shuttle valve is greater than the water supply pressure at the other end of the shuttle valve, the piston shifts to the open position. In the open position, the bleed-off port discharges excess water and old air to the drain port through a flow restrictor. Simultaneously, the air inlet port opens to provide a direct connection between the air pump and the top of the aeration tank. The air pump runs for a preset period of time recharging the head of air in the aeration tank.

Air Recharge Shut Off

The timer turns power off to the air pump and the solenoid valve at the end of the recharge cycle. The solenoid valve then closes the port between the air pump and the shuttle valve. The port between the shuttle valve and the atmosphere opens and releases air pressure. This allows water pressure to shift the piston to the closed position. With the piston in the closed position, the air recharge inlet port is closed and direct communication between the bleed off tube and the drain port is also closed.

Timer Operation

A timer controls the air recharge cycle and how frequently it occurs. The timer simultaneously energizes the air pump and the solenoid valve. After a preset amount of time, the timer shuts off the air pump and de-energizes the solenoid valve.

Solenoid Valve Operation

The solenoid valve is a three-way valve having ports that connect to the air pump, shuttle valve and the atmosphere. In the service cycle, the solenoid valve is de-energized and closes the port to the air pump, providing a positive shutoff to the pump. This prevents water from backing up into the air pump and damaging the pump. In the air recharge cycle, the solenoid valve closes the port to the atmosphere and opens the port from the air pump.

Shuttle Valve Operation

In the service position, water pressure holds the shuttle valve piston in the closed position, trapping the airhead in the aeration tank and closes the air recharge inlet port and drain port. During air recharge cycle, air pressure is greater than the water pressure and forces the shuttle valve piston in the open piston. The shuttle valve has an internal pressure relief valve that will relieve pressure (greater than 100 psi) that may build up in the aeration tank. This precautionary function protects components from failure due to excessive pressure.

Step 3

Filter Tank Operation—Backwash Cycle

Reversing the flow of water through the filter bed and backwashing dirty water to the drain cleans the filter bed. Raw water enters the filter control valve through the inlet port and is directed down the distributor tube and out the lower distributor at the bottom of the tank, flowing upward through the multimedia filter bed toward the top of the tank into the control valve. Water is then directed through a specific flow restrictor and out the drain port to be discharged to drain.

Step 4

Filter Tank Operation—Rinse Cycle

The rinse cycle packs the clean filter bed. Raw water enters the control valve through the inlet port and is directed downward through the filter bed into the bottom distributor, up the distributor tube into the control valve. Water is then directed through a specific flow restrictor and out the drain port to be discharged to drain.



Operating Conditions

The concentration limits listed below reflect the minimum or maximum individual limit that each contaminant was tested for separately without any interference of other contaminants in the influent water.

In reality, however, we know that these contaminants may be present in combination which may limit the filter's ability to remove these contaminants in higher concentrations. In some cases, individual sellers of this equipment have had success removing higher concentrations of contaminants—iron, for example—above the limitations we have listed. If you are considering the installation of this system for the reduction/removal of iron and/or hydrogen sulfide beyond the printed operating conditions below, we recommend that you consult Culligan for proper application. Installation of this system under these circumstances may void part(s) and/or all of the system warranty.

Compressor

The compressor does not operate during the recharge cycle.

General Instructions

The success of the installation will depend, to a great extent, on advanced planning and preparation. Careful attention to the location of the unit, 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.

Observe all state and plumbing codes, electrical codes and drain restrictions. The system and installation must comply with all state and local laws and regulations. Most codes require an anti-syphon device or airgap.

NOTE 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.

pH—The pH level of the influent water must be 7.0–8.5.

Iron—This system is rated for a maximum of 10 ppm of ferrous (clear water) iron. Consult the factory if iron bacteria is present.

Organic Matter (Tannins)—The presence of organic matter such as tannins will interfere with the oxidation process of converting the dissolved element, such as iron or manganese, to a non-soluble precipitate or solid substance, allowing it to be filtered out. The Sulfur-Cleer™ is not designed to remove organic bound iron.

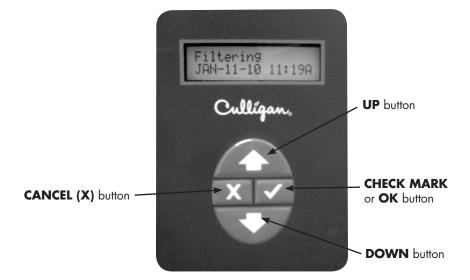
Alkalinity—A minimum alkalinity of 100 ppm is required for efficient removal of iron and hydrogen sulfide

Hydrogen Sulfide—Often referred to as the rotten egg smell, hydrogen sulfide will be reduced significantly on water supplies less than 8 ppm as tested by Culligan. Consult the factory if hydrogen sulfide concentrations are greater than 8 ppm.

NOTE Waste connection on drain outlets shall be designed and constructed to provide for connection to the sanitary waste system through an air gap of two pipe diameters or 25.4 mm (1 in.), whichever is larger.



Navigating the Menus and Keypad





UP ARROW button: scrolls up the menu



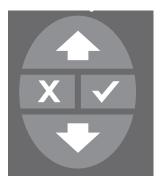
DOWN ARROW button: scrolls down the menu



CHECK MARK button: selects the highlighted option, opens a new screen, or accepts a changed setting



CANCEL or **X** button: returns to the previous screen or cancels a changed setting



Controller



Remote

NOTE Hold down the or to quickly scroll through the setting without repeatedly pressing the button.

Filtering JAN-01-13 11:19A

- 1. This is the **HOME SCREEN**. Press any button except to advance to the **MAIN MENU SCREEN**.
- 1)INFORMATION >2)MANUAL MODE
- 2. This is the **MAIN MENU SCREEN**. The ">" symbol indicates the menu selection. Press or to scroll through the menu.
- 3. Press to select a setting.



MANUAL MODE REGEN NOW

4. The screen displays the setting (Manual Mode) and the current value (Regen Now). Press

to change the value.

MANUAL MODE >REGEN NOW

5. The screen displays the ">" symbol next to the value, indicating that the value may be changed. Press or to change the value. For example, press to change the value to REGEN TONITE. Press again to select the next available value, BYPASS.

MANUAL MODE REGEN NOW

6. Press X to cancel the changed setting and revert to the default setting. The screen displays the default setting.

MANUAL MODE >BYPASS

- 7. Press to accept the changed value. If the setting values are displayed, the ">" symbol no longer appears next to the value.
- 1)INFORMATION >2)MANUAL MODE
- 8. The screen then returns to the **MAIN MENU**. Press **X** to return to the **HOME SCREEN**.

Filtering
JAN-01-13 11:19A

9. The screen displays the **HOME SCREEN**.

NOTE Unplugging the Culligan HE water filter will not affect any of the control settings (the control must be plugged in for at least 10 minutes). Once programmed, the settings will be stored indefinitely.



First Time Setup

First Time Setup Procedure

When a new controller is first powered on, the screen will display the first time setup message. The HE Controller is designed to simplify the setup and installation process by making some default recommendations during the initial setup. These default settings are appropriate for most common installations.

After completing the plumbing connections to the water filter, turn on and program the HE Controller.

FIRST TIME SETUP PRESS DOWN ARROW

When a new controller is first turned on, the screen displays **FIRST TIME SETUP**. Press to view and change (if necessary) the filter configuration.

Serial Number

S/N: 00000123

The screen displays the serial number for this Smart Controller. Press to display the firmware version information screen.

NOTE If this unit will be installed with a modem, it is required that this electronic ID number be reported to Culligan on the IQR form.

Firmware Version

FWR***LT21 MON DD YEAR The screen displays the firmware version and date installed for this Smart Controller. Press to display the month setup screen.

Set Month (Jan-Dec)

SET MONTH JAN The screen displays the month setting. Press to accept the information displayed (and view the next setting), or press to change the setting.

SET MONTH >JAN If you press the screen displays a cursor (>) symbol next to the displayed value. Press to see the next available value.

SET MONTH >FEB

The screen displays February instead of January. Press
to accept the selected month and advance to the next setting, **SET DAY**.

Set Day (0-31)

SET DAY >3

The screen displays the day setting. Press to accept the information displayed (and view the next setup screen), or press to change the setting.

Press to see the next available value. Press to accept the selected day and advance to the next setting, **SET YEAR**.



Set Year (2009-2030)

SET YEAR >2013

The screen displays the year setting. Press to accept the information displayed (and view the next setup screen), or press to change the setting.

Press to see the next available value. Press to accept the selected year and advance to the next setting, **CLOCK TYPE**.

Set Clock Type (12 or 24)

CLOCK TYPE >12 HR

The screen displays the clock type setting. Press to accept the information displayed (and view the next setup screen), or press to change the setting.

Press to change the clock type from 12-hour to 24-hour. Press to accept the selected clock type and advance to the next setting, **SET HOUR**.

Set Hour (12PM-11AM)

SET HOUR >10AM

The screen displays the hour setting. Press to accept the information displayed (and view the next setup screen), or press to change the setting.

Press to change the hour (in this example, from 12PM to 10AM).

Press to accept the selected hour and advance to the next setting, **SET MINUTES**.

Set Minutes (0-60)

SET MINUTES >20

The screen displays the minutes setting. Press to accept the information displayed (and view the next setup screen), or press to change the setting.

Press to change the minutes (in this example, from 0 to 20). Press to accept the selected hour and advance to the next setting, **UNIT TYPE**.

Unit Type (Softener, Filter, or Resin + Carbon)

UNIT TYPE >FILTER

The screen displays the unit type setting. Press \checkmark to change the setting to **FILTER** and advance to the next setting, **VALVE TYPE**.

Valve Type (HE 1, HE 1.5, 4-Cycle, 5-Cycle, Plat Plus)

VALVE TYPE >HE 1

The screen displays the valve type setting. Press to accept the default setting (**HE 1**) and advance to the next setting, **UNITS**.

Units (US or Metric)

UNITS >US

The screen displays the units of measure setting. Press to accept the default setting (US) and advance to the next setting, **MEDIA LIFE**.



Media Life

MEDIA LIFE >100000

The screen displays the media life setting (0–999,999), which specifies the estimated lifetime total flow of the filter media in gallons. Once the total flow reaches the programmed media life, the controller displays the alarm message **REPLACE FILTER MEDIA**. Press to accept the information displayed (leave the HE setting at the default, 100,000) and advance to the next setting, **TOTAL CAPACITY**.

Total Capacity

TOTAL CAPACITY >1000

The screen displays the total capacity setting for the filter, which specifies how often the filter will initiate reconditioning based on total flow, in gallons. When the total flow reaches total capacity, the filter initiates reconditioning at the preset time.

NOTE Culligan recommends using REGEN INTERVAL (Time Clock Backup) even if a meter is used to inititate reconditioning.

Press to accept the default HE setting, 1000.

Completed First Time Setup

INITIALIZING
JAN-01-13 12:01P

When the setup is complete, the circuit board microprocessor automatically calculates filter capacity. The screen displays the initializing status and the current date and time, and then transitions to the home screen.

FILTERING
JAN-01-13 12:01P

The screen displays the current state (the display alternates between Filtering and any error) and the date/time set for the unit. This is the default home screen.

The controller is designed to simplify the setup and installation process by making some default recommendations during the Initial Setup. The default settings are designed to be appropriate for most common installations.

Reset Menu to Default Values

This procedure resets the HE Controller to the factory settings and restarts **FIRST TIME SETUP**.

- 1. Disconnect power to the HE Controller.
- 2. Connect power to the HE Controller while pressing the and buttons for at least ten (10) seconds.
- 3. Release the and x buttons. The display should be blank; if not, go back to Step 1.
- 4. The HE Controller restarts, the display screen lights up and then displays FIRST TIME SETUP.
- 5. Follow the "First Time Setup Procedure" on page 8.



The following information can be displayed at the control valve or remote display. These settings are read-only. Press or to scroll through the settings. Press to view the previous setting.

Information

Screen Display	Range	Setting Description
FILTERING JAN-01-13 11:19A	N/A	1. From the HOME screen, press to view the main menu.
>1)INFORMATION 2)MANUAL MODE	1–6	 The screen displays the main menu. Press
FILTER LIFE LEFT 50000 GAL	0– 50,000	3. The screen displays the FILTER LIFE LEFT in gallons. Press to select the next information screen.
FILTER LIFE LEFT	0–100	4. The screen displays the FILTER LIFE LEFT in days. Press to see the next information screen.
REMAIN CAPACITY 700 GAL	0-no limit	5. The screen displays the filtering capacity remaining, measured in gallons (liters), before initiating reconditioning. Press to see the next information screen.
CURRENT FLOWRATE	0-no limit	 The screen displays the current flow rate, measured in gallons (liters) per minute. Press to see the next in- formation screen.
TODAY'S USAGE	0-no limit	7. The screen displays today's water usage, measured in gallons (liters). Press to see the next information screen.
AVERAGE DAILY 300 GAL	0-no limit	8. The screen displays average water usage for this configuration. Press to see the next information screen.
NEXT REGEN ON JAN-03	N/A	 The screen displays the date of the next regeneration, based on average daily water usage. Press to see the next information screen.



Screen Display	Range	Setting Description
TOTAL WATER USED 1000 GAL	0-no limit	 The screen the total water used for this configuration. Whole numbers are displayed above 100 gallons. Press to see the next information screen.
EXT FILT CAP REM 20000 GAL	0–no limit	11. If an external filter is used, the screen displays the remaining capacity of the filter. When the remaining capacity reaches zero, the system triggers the External Filter Alarm. Press to return to the main menu.
>1)INFORMATION 2)MANUAL MODE		12. The screen displays the main menu. Press X to exit to the home screen.
FILTERING JAN-01-13 11:19A		13. The screen displays the home screen.



To update the date and time on the HE Filter, follow this procedure.

Set Date and Time

Screen Display	Range	Setting Description
FILTERING JAN-01-13 11:19A	N/A	14. Start at the HOME SCREEN . Press to advance to the MAIN MENU SCREEN .
2)MANUAL MODE >3)SET DATE/TIME	N/A	 15. Press to scroll to 3) SET DATE/TIME. 16. Press to display the date and time settings.
Set Month	J	<u></u>
SET MONTH JAN	Jan-Dec	17. The screen displays the month setting. Press to display the next setting, or press to change the month setting.
SET MONTH >JAN	Jan-Dec	18. The screen displays a cursor next to the month. Press to display the next value (here, changing January to February).
SET MONTH >FEB	Jan-Dec	19. Press to display the next value (here, changing January to February).
SET MONTH FEB		20. Press
Set Day	•	_
SET DAY >2	1–30	1. Press to advance to the next setting if the day is correct, or press to change the day setting. Press to display the next value (for example, change 1 to 2).
	I	 Press to accept the new value. The screen displays the day without the cursor and advances to the Year setting
Set Year	1	1. Press to advance to the next setting if the year is cor-
SET YEAR >2013	2009–30	rect, or press to change the year setting. Press to display the next value (for example, change 2010 to 2012).
		 Press to accept the new value. The screen displays the year without the cursor and advances to the Clock Type setting.



Screen Display	Range	Setting Description
Set Clock Type		
CLOCK TYPE >12 HR	12 or 24	Press to advance to the next setting if the clock type is correct, or press and then to change the clock type setting (leave at default setting, 12 hour).
		Press to accept the new value. The screen displays the clock type without the cursor and advances to the Set Hour setting.
Set Hour		_
SET HOUR >10AM	12PM- 11AM	Press to advance to the next setting if the hour is correct, or press and then to change the hour (in this example, from 12PM to 10AM).
]	Press to accept the new value. The screen displays the hour setting without the cursor and advances to the Set Minutes setting.
Set Minutes		
SET MINUTES >20	0–60	Press to advance to the next setting if the clock type is correct, or press and then to change the minutes (in this example, from 0 to 20).
]	Press to accept the new value. The screen displays the minutes without the cursor and advances to the Daylight Savings setting.
Set Daylight Savings T	ime	
DAYLIGHT SAVINGS >YES	Yes No	Press to advance to the next setting if the daylight savings time setting is correct, or press and then to change the setting.
]	Press to accept the new value. The screen displays the daylight savings setting without the cursor.
Return to the Home So	reen	
FILTERING JAN-01-13 11:19A		Press X until the screen displays the HOME SCREEN and saves the settings.
L	1	



There are several conditions that will cause the control to trip a regeneration. The screen displays REGEN TONITE when the control has signaled for a regeneration. REGENERATING is displayed 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. At the preset time, when the number of days without a regeneration is equal to the regeneration interval (timeclock backup) setting.
- 3. At the preset time, when REGEN TONITE is selected. The screen displays REGEN TONITE.
- 4. Immediately, when the REGEN NOW is selected. The screen displays REGENERATING.
- 5. Immediately, if power to the unit has been off for more than three (3) hours and time of day has been restored.
- 6. At the preset time based on **DAY-OF-WEEK** Regeneration setting.

Follow either procedure to bypass the filter or to initiate a manual regeneration or automatically bypass the filter at the control valve or the remote display.

Delayed Regeneration

Screen Display	Range	Changing the Setting	
FILTERING JAN-01-13 12:01P	N/A	1.	At the HOME SCREEN , press and hold for at least three seconds, then release the button.
REGEN TONITE JAN-01-13 12:01P	Regen Tonite	2.	The first line of the display will toggle between FILTERING and REGEN TONITE .
REGEN OFF JAN-01-13 12:01P	Regen Off	3.	To cancel a delayed regeneration, press and hold the for three (3) seconds, then release the button. The screen displays REGEN OFF .

Immediate Regeneration

Screen Display	Range	Changing the Setting	
FILTERING JAN-01-13 12:01P	N/A	1.	At the HOME SCREEN , press and hold for at least ten (10) seconds, then release the button.
REGEN NOW JAN-01-13 12:01P	Regen Now	2.	The first line of the screen displays REGEN NOW . The filter will initiate an immediate regeneration.
REGENERATING JAN-01-13 12:01P	N/A	3.	The first line of the screen displays REGENERATING .

Regeneration



Standard Manual Regeneration

Screen Display	Range		Changing the Setting
Filtering JAN-01-13 12:01P	N/A	1.	This is the HOME SCREEN . Press any button except X to advance to the MAIN MENU SCREEN .
1)INFORMATION >2)MANUAL MODE	1–6	2.	Press to 2)MANUAL MODE then press . The screen displays the Manual Mode settings.
	Regen Off	3.	Press 🗸 and 🚹 or 🗣 to change the setting.
MANUAL MODE >REGEN NOW	Regen Now	4.	The default is REGEN NOW . Press the to select this option to begin regeneration immediately.
	Regen Tonite	5.	If the screen displays REGEN OFF then the filter will not regenerate.
	Bypass	6.	If the screen displays REGEN TONITE then the filter will regenerate that night at 2:00 a.m. (or at the preset regeneration time). The screen displays two status messages: FILTERING and REGEN TONITE.
		7.	If the screen displays BYPASS then for a specified time the filter will be bypassed. Press to select the total time the filter is to be in the bypass state.
MANUAL BYPASS >OFF	Off 30 (min) 60 90	8.	Press and and or to to select the total time the filter is to be in the bypass state.
	120 180 Manual Bypass	9.	Press to accept this setting. The screen displays the Manual Mode menu.
1)INFORMATION >2)MANUAL MODE		10.	Press X until the screen displays the HOME SCREEN and saves the settings.



Care and Cleaning of Your Water Conditioner

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 conditioner 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.
- 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 filters 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 filter should be discontinued until it is verified that the water is again potable. To do this, screw the blue knob on the back of the water filter against the barrel of the bypass valve. Then, call your Culligan dealer to have your system sanitized before it is placed back into service.

NOTE Following the manufacturer's instructions regarding operation, maintenance and replacement requirements, including replacement of filters if applicable, is essential for Culligan's products to perform as advertised.

- Reset the time, if required, after any interruption of electrical power to keep the unit on its normal schedule.
- 6. 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.

Recommended Preventative Maintenance Inspection Schedule

The Culligan High Efficiency Sulfur-Cleer water filter 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. The filter is for problem water use and routine maintenance is required. Contact your local Culligan dealer to perform routine maintenance.

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 if on a private water supply.	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.
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.
Media	As needed.	Sulfur-Cleer—Media may need to be reconditioned or replaced depending on water characteristics.



Preventive Maintenance

Maintenance Inspection

This Culligan Sulfur-Cleer™ water filter has been designed to provide a good, consistent service life. Because of the nature of problem water, we recommend that the local Culligan dealer provide regular maintenance/service contracts for the proper operation of your systems. The water filter service begins with a multi-point inspection of your water filter system in an effort to uncover any and all problems that may exist. Listed below is a recommended list of maintenance items to be inspected at a minimum of once a year (or more frequently depending on the raw water quality).

Test Water	Feed	Product
Hardness		
Iron		
Hydrogen Sulfide		
Chlorine		
TDS		
Other		
Comments:		
Bypass Valve		
Bypass in Service or Bypass?		
Condition of Bypass Valve		
Operation OK?		
Control Valve		
Condition of Eductor (Sulfur-Cleer)		
Condition of Solution Valve (Sulfur-Cleer)		
Condition of Pistons		
Condition of Solenoid Valve		
Condition of Motor:		
Condition of Flow Control		
Condition of Optical Sensor		
Condition of Check Valve		
Condition of Compressor	Output	PSI
Control Settings	Before	After
Check /reset Time of Day		
Check Tme of Regeneration		
Setting ON time (seconds), OFF time (gallons or minutes)		
Backwash (minutes)		
Chemical Draw/Slow Rinse (minutes)		
Fast Rinse (minutes)		
Cycle control	Test Cycle	OK\$
	Backwash	
	Chemical Draw	
	Slow rinse	
	Fast rinse	
Media Tank		
Freeboard inches:		
Media Condition		



When and How to Bypass Your Water Filter

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

- 1. If lines to outside faucets do not bypass the water filter, and you do not want to waste filtered water on lawn sprinkling or other outside uses.
- 2. If you are going away on vacation and do not want the unit to recharge.

Bypass Valve

In the back of Culligan water filter is a Cul-Flo-Valv® Bypass valve. To bypass the unit, turn the blue knob clockwise. To return to soft water service, turn the blue knob counter-clockwise.

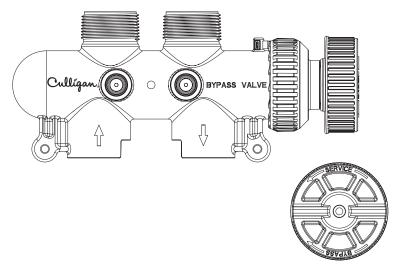


Figure 2. Bypass valve.

Bypassed

To BYPASS, turn the blue knob clockwise (see directional arrow on end of knob) until the knob stops as shown in Figure 2. DO NOT OVERTIGHTEN!

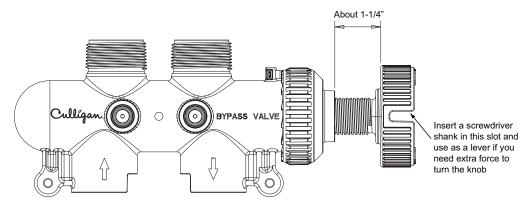


Figure 3. Service valve.

Filtered Water

To return to SERVICE, turn the blue knob counter-clockwise (see directional arrow on end of knob) until the knob stops as shown in Figure 3. DO NOT OVERTIGHTEN!



Things to Check Before You Call for Service

If you unexpectedly experience changes in your 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 filter should be manually reconditioned according to instructions on page 16 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. Plug in the transformer then reset conditioner to proper time of day.

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 change—such as daylight savings—will disrupt your filter's reconditioning schedule by causing the timer to run off schedule. Reset the timer to the 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 "Service" position (see <u>page 19</u>). 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 filter (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 filter. You can reprogram your reconditioning schedule by following the directions on page 15. Call your Culligan dealer for advice and save a service call.



Error Codes

The HE controller display, as well as the Remote Display (if connected), may display the following errors.

PROBLEM FOUND APR-01-13 10:01A

When the HE Controller identifies an error, it is programmed to attempt to correct the error without user input. If the problem persists, the HOME SCREEN displays PROBLEM FOUND. Press to display the first error present.

REPLACE FILTER MEDIA

2. Press to display any additional errors present.

-->CLEAR ERRORS

3. Press and to view action: CLEAR ERRORS, GO TO MENU, or EXIT. If you select CLEAR ERRORS, the controller checks the error status and attempts to clear the error. If the error still exists, the home screen displays PROBLEM FOUND. If the error no longer exists the screen displays SYSTEM OK.

-->GO TO MENU

4. Press to select CLEAR ERRORS, GO TO MENU, or EXIT.

Error	Reason for Error	Comment/ Clearing Error Message
Call Culligan at	This message is displayed if an error has been detected that requires servicing and no modem installed in the system.	Call the number shown. If possible, place this call using a phone that will allow you to see and enter changes to the main controller if required by the service technician during the call
Low Battery	Battery needs replacement.	Replace with Panasonic Model# CR 2032 3V battery.
Motor Home Err	The controller failed to detect proper position sensor feed back during INITIALIZATION (not during a regen or progressive flow)	Verify that the proper valve type was selected in First Time Setup. Check connections of motor and position sensors at both the motor and the GBE board.
No Remote Signal	Main board is not receiving a signal from the remote.	Remote is off, out of range or on a different channel from the main board. If interference is suspected, try moving the remote closer or switching to a different channel on both the main and remote units
Pos Sensor Err/ Motor Position Error	The controller is seeking a known valve position before/during/ after a regen, or during progressive flow, but cannot find it (this error does NOT appear during initialization).	Check connections of motor and position sensors at both the motor and GBE board.
Replace Ext Filt	Total gallons through the second- ary filter (i.e. "Big Blue" filter) has exceeded the specified capacity of the Big Blue.	Replace optional filter cartridge. Reset the external filter media life at Main Menu/ Accessories/ Ext. Filter menu
Replace Media	Total gallons through the unit has exceeded the specified capacity of the media.	Replace the media. Reset the media filter life at Main Menu > Advanced Setup > Regen Setup > Media Life



Troubleshooting Guide

Complaint	Problem	Cause	Solution	
Iron bleed- through or	A. Inadequate backwash of filter	Plugged drain line flow control	Call your Culligan dealer for service.	
staining.		Insufficient water supply from well.	2. Check for minimum specified flow and pressure requirements of filter system.	
		3. Plugged aeration tank inlet diffuser or pick-up tube.	3. Call your Culligan dealer for service.	
		4. Media bed fouled.	4. Call your Culligan dealer for service.	
	B. Fails to regenerate	Interrupted electrical service.	1. Assure continuous electrical supply (check plug, breaker, fuses, etc.).	
		2. Faulty circuit board.	2. Replace circuit board.	
		3. Faulty drive motor.	3. Replace drive motor.	
		4. Circuit board set incorrectly.	4. Reset circuit board.	
	C. Water contaminant levels are greater than limits established by Culligan.	It is not uncommon for local water conditions to change.	Call your Culligan dealer for service.	
	D. Inadequate aeration	Loss of air through inlet check valve.	Call your Culligan dealer for service.	
		2. Loss of air through air leak.	Call your Culligan dealer for service.	
		3. Faulty aeration pump.		
		a. Electrical failure	a. Assure permanent electrical service (check plug, breaker, fuses, terminal block on control valve, etc.).	
		b. Pneumatic failure	b. Call your Culligan dealer for service.	
		c. Damp environment	c. Call your Culligan dealer for service.	
		4. Air loss through high demand.	Call your Culligan dealer for service.	
	E. Exceeding recommended filter system flow rate.	Service flow rate demand is higher than filter system design flow rate.	Call your Culligan dealer for service.	
	F. Regeneration during service flow demand.	Time of day set incorrectly.	Call your Culligan dealer for service.	
	G. Raw water bleeding through filter.	Internal control valve leak.	Call your Culligan dealer for service.	



Complaint	Problem	Cause	Solution	
Water leaking from relief valve.	A. Dirt lodged under seat of valve.	Pressure has exceeded rating on relief valve and	Call your Culligan dealer for service.	
	B. Faulty or defective relief valve	caused valve to open	Call your Culligan dealer for service.	
Water is effervescent	A. This can be expected when water is aerated under pressure.	1. Water supply has been naturally aerated under well system pressure. As water is released to the atmosphere, air molecules separate from the water molecules.	1. This natural phenomenon will typically dissipate to the atmosphere in a matter of seconds. If preferred, water can be drawn and stored in an open container prior to use (i.e. fill a pitcher and store in the refrigerator for cool, fresh drinking water).	
Loss of pressure	A. See complaint #1,	problem A & B		
Air spurting at outside or non-	A. Inlet check valve not sealing.	Improper installation location.	Call your Culligan dealer for service.	
filtered water fixtures.		Foreign material preventing check valve.	2. Call your Culligan dealer for service.	
		3. Worn or faulty check valve.	3. Call your Culligan dealer for service.	
Air spurting from filtered water fixtures.	A. Reduced pressure in distribution system.	Service flow demand is greater than water supply available from well pump system.	Repair or replace well pump system.	
		2. Water flow is restricted by supply piping and/or water treatment equipment.	2. Call your Culligan dealer fo service.	
Loss of media through drain line.	A. New filter backwashed during first 24 hours after installation.	1. New filter media is shipped in a dry condition and must soak for 24 hours to become fully saturated before a backwash cycle.	Clean drain line flow control, control valve body, seals, spacers and piston assemblies	
	B. Air passing through filter during backwash.	Excess air accumulated in aeration tank from aeration pump.	Call your Culligan dealer for service.	
		Excess air accumulated in filter system from water	2a. Repair well pump system.	
		supply or well pump.	2b. If the cause was due to temporary loss of water main pressure; the problem will most likely correct itself with the return of continuous pressure.	



Complaint	Problem	Cause	Solution	
Excessive noise during regeneration.	A. Howling or whistling noise during regeneration cycle.	Inadequate drain line size.	Call your Culligan dealer for service.	
		2. Drain line is vibrating against other pipes, conduits, pipe hangers, heat ducts, floor joists,etc.	2. Call your Culligan dealer for service.	
Water is running to drain continuously.	A. Control valve is stuck in regeneration cycle.	Electrical service to control(s) has been interrupted.	Assure continuous electrical service is available. (check plug, breaker, fuse, etc.)	
		2. Faulty circuit board.	2. Replace circuit board.	
		3. Faulty drive motor.	3. Call your Culligan dealer for service.	
		Foreign material lodged in piston.	4. Call your Culligan dealer for service.	
Blue green staining.	A. Corrosive water condition in copper	1. Low pH condition of the raw water supply.	Call your Culligan dealer for service.	
distribution piping system.		2. In rare occasions, highly aerated water in combination with a specific water supply can create a slightly corrosive condition.	2. Call your Culligan dealer for service.	
Compressor doesn't run.		1. Compressor unplugged.	1. Plug it in.	
		2. Relay settings incorrect.	2. Call your Culligan dealer for service.	
		3. Bad relay.	3. Call your Culligan dealer for service.	
Compressor run with excessive noise.		1. Dead head pressure is 65 psi.	Call your Culligan dealer for service.	
Compressor runs continuously.		1. Incorrect relay settings	Call your Culligan dealer for service.	
		2. Bad relay.	2. Call your Culligan dealer for service.	



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.

NOTE 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 West Higgins Road, Suite 1100, Rosemont, IL 60018 USA

(847) 430-2800 www.culligan.com

Product: Culligan High Efficiency 10" Fiberglass and Quadrahull

Sulfur-Cleer Water Filter

Testing Conditions & Results:

Capacity: 1,000 gallons Pressure: 20–60 psi

pH: 7.0–8.5 Temperature: 33–120°F (1 - 49°C)

Service Flow: 5.0 gpm @ 4.0 psi

Operating Conditions:

Operating Temperature Range: 33–120°F (1 - 49°C)
Water Pressure Range (inc. Canada): 20–60 psi (138–400 kPa)

Electrical Characteristics: 120V/60 Hz, 45 Watts, 175 Watt Cont./245 Watt Max.

Substance Reduction

This system has been tested according to NSF/ANSI 42 for the reduction of the substances listed below.

Model	Substance	USEPA SDWA MCL	Percent Reduction	Avg Test Influent Concentration Level	Avg Test Effluent Concentration Level
10" Fiberglass	Hydrogen Sulfide	0.3 mg/L	98.9	8.2 mg/L	0.091 mg/L
	Iron		98.7	10.4 mg/L	0.14 mg/L
10" Quadrahull	Hydrogen Sulfide	0.3 mg/L	98.9	8.2 mg/L	0.091 mg/L
	Iron		98.7	10.4 mg/L	0.14 mg/L

Systems tested against NSF/ANSI Standard 372 and NSF/ANSI 42 for the reduction of iron, and WQA Test Protocol 04-001 and NSF/ANSI 42 for the reduction of hydrogen sulfide as verified and substantiated by test data. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system as specified in NSF/ANSI 42.

Testing was performed under laboratory conditions, actual results may vary.

Performance Indicator: If water flow decreases or a noticeable odor returns, the filter should be reconditioned. If conditions do not improve, contact your local Culligan dealer. He can determine if your filter requires servicing.

Regeneration Frequency: Regeneration frequency will vary depending upon water conditions.

Refer to your Installation and Operation Instructions, Parts List and Printed Warrantees 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 may vary based on local water conditions. The substances reduced by this product are not necessarily in your water.

Performance Data Sheet High Efficiency 10" Sulfur-Cleer Water Filter



Records and Data

Important Data on Your Water Filter

Identification

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.

Model Name	Catalog No	
Control Model No.	Control Serial No.	
Date of Installation	Tank Serial No.	
Settings Time of Recharge:	a.m. /	p.m.
Regeneration Interval		days
Number of people in household		
Tank Size		inches
Water Analysis Total Hardness		(ana)
Total Iron		(ppm)
pH (acidity)		
Other		



Culligan Limited Warranty

Culligan High Efficiency® Automatic Water Filters

You have just purchased one of the finest water filters made. As an expression of our confidence in Culligan International Company products, your water filter 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 filter

For a period of FIVE YEARS Soft-Minder® meter, if so equipped

Remote display or modem

For a period of TEN YEARS The High Efficiency® Plus circuit board,

The control valve body, excluding internal parts

The fiberglass conditioner tank

For the LIFETIME of the original consumer purchaser

The Quadra-Hull® conditioner tank

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 filtering 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 West Higgins Road, Suite 1100, Rosemont, IL 60018 USA

(847) 430-2800

www.culligan.com



With Culligan You Get More Than A Quality Product

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, delivering quality products and 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.

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Notes