

# Culligan<sup>®</sup>

## OWNERS GUIDE

### Aquasential™ Smart High Efficiency Water Filters

Models from 2021  
updated with  
GBX2 Circuit Board





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# 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 unit, read this manual to become familiar with the device and its capabilities.

Installation or maintenance done on this system by an untrained service person can cause major damage to equipment or property damage. Not adhering to the recommended service/maintenance can cause damage to equipment or property damage.

## Safety Instructions and Safety Definitions

### Note

**NOTE!** “Note!” is used to emphasize installation, operation or maintenance information which is important, but does not present any hazard.

### Caution



**CAUTION!**

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

### Warning



**WARNING!**

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

The **CAUTION** and **WARNING** paragraphs are not meant to cover all possible conditions and situations that may occur. It must be understood 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.

**NOTE!** Be sure to check and follow the applicable plumbing codes and ordinances when installing this equipment.

**WARNING!** Use protective clothing and proper face or eye protection equipment when handling chemicals or power tools.

# Attention Culligan Customer:

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.

**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. Failure to comply with any warning or caution that results in any damage will void the warranty.



**CAUTION!**

This system is to be supplied with cold water only.

**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. Children should be instructed not to play with this appliance.

**CAUTION!**

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

**CAUTION!**

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

**NOTE!** This system is not intended for use with water that is microbiologically unsafe or of unknown quality without adequate disinfection either before or after the system.

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 this Culligan product to your full satisfaction, carefully follow the instructions in this manual.

Products manufactured and marketed by Culligan International Company (Culligan) and its affiliates are protected by patents issued or pending in the United States and other countries. Culligan reserves the right to change the specifications referred to in this literature at any time without prior notice. Culligan, Aqua-Sensor, Tripl-Hull, and SoftMinder are trademarks of Culligan International Company or its affiliates.

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# Thank You!

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

Congratulations on selecting the Culligan® Aquasential™ Smart High Efficiency Water Filter system. 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.

If this is your first experience having filtered water in your home, you'll love the amazing difference it makes. We promise that you'll never want to be without it again.

The Culligan Aquasential Smart High Efficiency Water Filter system 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.

This manual is based on information available at the time it was finalized, approved, and published. Continuing design refinement could cause changes that may not be included in this publication.

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.

The Culligan Aquasential Smart High Efficiency 9" Cullar, 10" Cullar, 9" Cullar Outdoor, and 10" Cullar Outdoor Water Filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 42 for the effective reduction of chlorine taste and odor up to 120,000 gallons for the 9" filter and 180,000 gallons for the 10" filter as verified and substantiated by test data.



The Culligan Aquasential Smart High Efficiency 9" Cullneu, 10" Cullneu, 9" Cullneu Outdoor, and 10" Cullneu Outdoor Water Filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI/CAN Standard 61 for material safety requirement only. Not certified for contaminant reductions by WQA.

The Culligan Aquasential Smart High Efficiency 9" Filtr-Cleer, 10" Filtr-Cleer, 9" Filtr-Cleer Outdoor, and 10" Filtr-Cleer Outdoor Water Filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 42 for Class IV ( $\geq 15\mu\text{m}$  to  $< 30\mu\text{m}$ ) particulate reductions as verified and substantiated by test data.

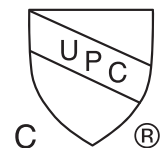
The Culligan Aquasential Smart High Efficiency 9" Filter Empty, 10" Filter Empty, 9" Filter Empty Outdoor, and 10" Filter Empty Outdoor Water Filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1 and NSF/ANSI/CAN Standard 61 for material safety requirement only. Not certified for contaminant reductions by WQA. No media or underbedding has been qualified with these systems.

The Culligan Aquasential Smart High Efficiency 9" Filter Empty w/FP, 10" Filter Empty w/FP, 9" Filter Empty w/FP Outdoor, and 10" Filter Empty w/FP Outdoor Water Filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1 and NSF/ANSI/CAN Standard 61 for material safety requirement only. Not certified for contaminant reductions by WQA. No media or underbedding has been qualified with these systems.

The Culligan Aquasential Smart High Efficiency 10" and 12" Iron-Cleer® Filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 42 for the effective reduction of iron up to 1,400 gallons for the 10" filter and 2,000 gallons for the 12" filter as verified and substantiated by test data.

The Culligan Aquasential Smart High Efficiency Sulfur-Cleer™ Filters with Quadra Hull or Fiberglass tanks have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 42 for the effective reduction of iron up to 1,000 gallons and NSF/ANSI Standard 42 for the effective reduction of hydrogen sulfide as verified and substantiated by test data.

The Culligan Aquasential Smart High Efficiency Arsenic 12", 14", and 16" Filters and the Aquasential Smart High Efficiency Arsenic 12", 14", and 16" Outdoor Filters have been certified by IAPMO against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 53 for the effective reduction of total arsenic (pentavalent and trivalent) as verified and substantiated by test data. See Performance Data Sheet and Arsenic Facts section for an explanation of reduction performance.



The Culligan Aquasential High Efficiency Water Filter Outdoor Filter complies with the UL 50/50E standards for an IP45 Rating.

Contains FCC ID: 2AC7Z-ESPWROOM32D and IC: 21098-ESPWROOM32D or  
FCC ID: 2AC7Z-ESP32WROVERE and IC: 21098-ESP32WROVERE.

The specific FCC ID and IC identification label is located on the exterior of the product.

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

Le présent appareil est conforme aux CNR Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This device complies with Health Canada's Safety Code. The installer of this device should ensure that RF radiation is not emitted in excess of the Health Canada's requirement.

Cet appareil est conforme avec Santé Canada Code de sécurité 6. Le programme d'installation de cet appareil doit s'assurer que les rayonnements RF n'est pas émis au-delà de l'exigence de Santé Canada.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Les changements ou modifications non expressément approuvés par la partie responsable de la conformité pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Innovation, Science and Economic Development Canada's licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This Class B digital apparatus complies with Innovation, Science and Economic Development Canada ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Innovation, Sciences et Développement économique Canada.

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Licensed plumbers know that standard industry procedures include only to hand tighten or use strap wrenches on plastic parts. Plastic piping systems must be installed, operated and maintained in accordance with accepted standards and procedures. Not adhering to the recommended service/maintenance can cause damage to equipment or property damage.

**NOTE!** An Owners Guide is available online; it contains answers to most questions, system operation information, suggested maintenance, and a trouble shooting section.  
[www.culligan.com/support/product-information/product-manuals](http://www.culligan.com/support/product-information/product-manuals)

# Specifications

## Culligan Aquasential Smart High Efficiency (HE) Water Filters

Culligan Smart HE Filters	9" 9" Outdoor	10" 10" Outdoor
<b>General</b>		
Control Valve type	1" Reinforced Thermoplastic w/GBX2 Circuit Board	1" Reinforced Thermoplastic w/ GBX2 Circuit Board
Installation Environment	Indoor / Outdoor	Indoor / Outdoor
Filter Tank Size	9 x 48 in. (229x1,219mm)	10 x 54 in. (254x1,372mm)
Temperature Limits	33-120°F (1-50°C)	33-120°F (1-50°C)
Water Pressure Limits	20-120 psi (140-830kPa)	20-120 psi (140-830kPa)
Water Pressure Limits (Canada)	20-90 psi (140-620kPa)	20-90 psi (140-620kPa)
Electrical Requirements (Control Valve)	24 VDC, 36 W	24 VDC, 36 W
Overall Height	54 in. (1,372 mm)	60 in. (1,524 mm)
<b>Filtr-Cleer®</b>		
Rated Service Flow @ Pressure Drop	7.6 gpm @ 15 psi	8.1 gpm @ 15 psi
Minimum Practical Filtration Size	15 microns	15 microns
Maximum Particulate Matter	150 NTU	150 NTU
Maximum Suspended Solids	150 mg/L	150 mg/L
Drain Flow, Maximum <sup>1</sup>	4.5 gpm	7.0 gpm
pH Limitation	6.0 - 9.5	6.0 - 9.5
Recharge Time <sup>2</sup>	21 min.	21 min.
Recharge Water Consumption, Av. <sup>3</sup>	90 gal.	140 gal.
Freeboard <sup>4</sup>	20 ± 1.5 inches	19 ± 1.5 inches
<b>Cullar®</b>		
Rated Service Flow @ Pressure Drop	4.0 gpm @ 2.0 psi	5.9 gpm @ 5.0 psi
Drain Flow, Maximum <sup>1</sup>	3.5 gpm	5.5 gpm
pH Limitation	5.0 - 11.0	5.0 - 11.0
Recharge Time <sup>2</sup>	21 min.	21 min.
Recharge Water Consumption, Av. <sup>3</sup>	40 gal.	110 gal.
Cullar Media Volume	0.73 cu. ft	1.5 cu. ft
Cullsan® Underbedding Media Amount	10 lb (.1 ft <sup>3</sup> )	20 lb (.2 ft <sup>3</sup> )
Freeboard <sup>4</sup>	22 ± 1.5 inches	24 ± 1.5 inches
Rated Capacity	120,000 gallons	180,000 gallons
<b>Cullneu®</b>		
Rated Service Flow @ Pressure Drop	4.0 gpm @ 2.0 psi	5.9 gpm @ 3.0 psi
Drain Flow, Maximum <sup>1</sup>	3.5 gpm	5.5 gpm
pH Limitation*	5.2 to 6.8	5.2 to 6.8
Recharge Time <sup>2</sup>	21 min.	21 min.
Recharge Water Consumption, Av. <sup>3</sup>	70 gal.	110 gal.
Cullneu Media Volume <sup>5</sup>	1.0 cu. ft	1.5 cu. ft
Freeboard <sup>4</sup>	13 ± 1.5 inches	18 ± 1.5 inches

<sup>1</sup> Backwash at 120 psi (830 kPa).

<sup>2</sup> Factory settings.

<sup>3</sup> Factory settings and 120 psi line pressure.

<sup>4</sup> Measured from top of media to top surface of tank threads. (backwashed and drained).

<sup>5</sup> Under dynamic conditions, it might be necessary to mix five parts Cullneu with one part Cullneu C to effectively raise the pH.

**NOTE!** Filtr-Cleer media is pre-measured, boxed, and shipped with each Filtr-Cleer system.



## Culligan Smart HE Iron-Clear Filters

	10" Iron-Clear	12" Iron-Clear
Control Valve Type	1" Reinforced Thermoplastic w/ GBX2 Circuit Board	1" Reinforced Thermoplastic w/ GBX2 Circuit Board
Installation Environment	Indoor	Indoor
Overall Conditioner Height	67"	65"
Media Tank Dimensions (D x H)	2 ea. 10" x 54"	2 ea. 12" x 52"
Filter Media Type	1.0 cu. ft Birm	1.5 cu. ft Birm
Underbedding		
G-50	35 lb	35 lb
Cullsan U	25 lb	25 lb
Capacity <sup>1</sup>	1400 gallons	2000 gallons
Freeboard <sup>2</sup>	21"	18"
Max. Clear Water (Soluble) Iron	10 ppm	10 ppm
Max. Hydrogen Sulfide <sup>3</sup>	5.0 ppm	5.0 ppm
Minimum Alkalinity	100 ppm	100 ppm
pH for Iron Removal	7.0 - 8.5	7.0 - 8.5
<b>Service Flow @ Pressure Drop (Clean Bed)</b>		
Normal	4 gpm @ 6 psi	4 gpm @ 4 psi
Maximum <sup>4</sup>	6 gpm @ 9 psi	9 gpm @ 14 psi
Operating Pressure	20-60 psi	20-60 psi
Operating Temperature	33-120° F (1-48° C)	33-120° F (1-48° C)
Electrical Requirements (Control Valve)	24 VDC, 36 W	24 VDC, 36 W
Electrical Requirements (Compressor)	120VAC/60Hz, 175W/245W (continuous/max)*	120 Volts/60Hz, 175W/245W (continuous/max)*
Drain Flow, Maximum	10 gpm (5.5 gpm minimum required)	10 gpm (8.0 gpm minimum required)
<b>Regeneration Time</b>		
Backwash	5–20 minutes	5–20 minutes
Fast Rinse	5–20 minutes	5–20 minutes

<sup>1</sup> Capacity based on 4 gpm and 10 mg/L of dissolved iron.

<sup>2</sup> Measure from top of media bed to top of inlet fitting.

<sup>3</sup> Hydrogen sulfide will be reduced significantly in water containing less than 5 ppm as tested by Culligan.

<sup>4</sup> Max flow rates and pressure drop characteristics have not been validated by the Water Quality Association or IAPMO R&T. The maximum specified flow rate at which the system will deliver treated water is defined as service flow.

\* When compressor is running periodically, otherwise the power consumption is ~1 watt.

## Culligan Smart HE Sulfur-Clear Filters

	10" Fiberglass	10" Quadra-Hull
Control Valve Type	1" Reinforced Thermoplastic with GBX2 Circuit Board	1" Reinforced Thermoplastic with GBX2 Circuit Board
Installation Environment	Indoor	Indoor
Overall Conditioner Height	69"	69"
Media Tank Dimensions (D x H)	10 x 54 in.	10 x 54 in.
Filter Media Type	1.5 cu ft CIM	1.5 cu ft CIM
Underbedding	Cullsan, 20 lb	Cullsan, 20 lb
Capacity <sup>1</sup>	1000 gallons	1000 gallons
Freeboard <sup>2</sup>	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
pH	7.0–8.5	7.0–8.5
Service Flow @ Pressure Drop (Clean Bed) Normal <sup>3</sup>	5 gpm @ 4 psi	5 gpm @ 4 psi
<b>Maximum</b>		
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 (Control Valve)	24 VDC, 36 W	24 VDC, 36 W
Electrical Requirements (Compressor)	120VAC/60Hz, 175W/245W (continuous/max)*	120 Volts/60Hz, 175W/245W (continuous/max)*
Drain Flow, Maximum	5.5 gpm	5.5 gpm
Backwash	5-20 minutes	5-20 minutes
Pause/Draw	Pause = 1 min / Chlorine Draw (if used) = 90 min	Pause = 1 min / Chlorine Draw (if used) = 90 min
Fast Rinse	5-20 minutes	5-20 minutes

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

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

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

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

## Culligan Smart HE Arsenic Filters

	12" Arsenic 12" Arsenic Outdoor	14" Arsenic 14" Arsenic Outdoor	16" Arsenic 16" Arsenic Outdoor
<b>General</b>			
Control Valve Type	1" Reinforced Thermoplastic w/GBX2 Circuit Board		
Installation Environment <sup>1</sup>	Indoor / Outdoor		
Overall Conditioner Height	60 in.	73 in.	73 in.
Media Tank Type	Quadra-Hull Tank		
Media Tank Dimensions (Dia x Ht) 12 x 52 in. 14 x 65 in. 16 x 65 in.	12 x 52 in.	14 x 65 in.	16 x 65 in.
Cull-AsX53 Media and Quantity	2.0 cu. ft	3.0 cu. ft	4.0 cu. ft
Underbedding Type and Quantity	Cullsan, 15 lb	Cullsan, 20 lb	Cullsan, 25 lb
Freeboard <sup>2</sup>	15"	26"	25"
Media Life - Rated Capacity - Gallons	125,000 Gallons	180,000 Gallons	250,000 Gallons
Rated Service Flow @ Pressure Drop	5 gpm @ 2 psi	7.5 gpm @ 5 psi	10.0 gpm @ 10 psi
<b>Recommended Water Quality Criteria</b>			
pH Range	6.5 - 8.5		
Arsenic - Total (Type III & Type V)	< 100 µg/l		
Iron	< 0.3 mg/l (< .1 mg/l recommended)		
Manganese	< 0.01 mg/l (<.1 mg/l recommended)		
Phosphate <sup>3</sup>	< 0.40 mg/l (< .01 mg/l recommended)		
Silica <sup>4</sup>	< 30 mg/l recommended		
Sulfate	< 100 mg/l		
Hydrogen Sulfide	None detectable		
Turbidity	< 5 NTU		
Fluoride	< 1 mg/l		
Hardness	< 300 mg/l		
Nuisance Bacteria <sup>5</sup>	None detectable - for best performance and media life		
Tannins	None detectable		
Operating Pressure	20–120 psi [138–862 kPa]		
Operating Pressure Canada	20–90 psi [138–621 kPa]		
Operating Temperature	33–120 deg F [1–49°C]		
Electrical Requirements (Control Valve)	24 VDC, 36 W		
Drain Flow, Max <sup>6</sup>	7.0 gpm	10.0 gpm	11.5 gpm
<b>Reconditioning Time</b>			
Backwash	15 Minutes		
Fast Rinse	5 Minutes		

<sup>1</sup> Unit must have Outdoor certification/rating label to be used in an Outdoor installation and requires Culligan Outdoor rated power supply.

<sup>2</sup> Measured from top of media surface to top surface of tank threads (backwashed and drained)

<sup>3</sup> Increased Phosphate levels will reduce rated media life.

<sup>4</sup> Increased Silica levels will reduce rated media life.

<sup>5</sup> Nuisance Bacteria includes Iron Related, Slime Forming and Sulfate Reducing Bacteria.

<sup>6</sup> Backwash at 60 psi

# Application & Operation

## Application & Operation

It is helpful to understand how your Culligan® Smart HE Water Filter functions and know its capabilities and limitations. The following section provides a brief explanation of how your Culligan filter system operates and the future anticipated service requirements to keep your system functioning efficiently and effectively.

### Cullar® Filter

Smart HE Filters with Cullar D+ activated carbon media can reduce chlorine and associated tastes and odors. Some other tastes and odors associated with naturally occurring organics may also be removed. Cullar D+ media can temporarily reduce hydrogen sulfide levels but if hydrogen sulfide is constantly present in the water an odor reduction system specifically designed for hydrogen sulfide reduction is necessary. Whenever the cause of an objectionable taste or odor has not been identified further water testing is required. Cullar D+ media should not be used with water that is of unknown microbiologically quality, is unsafe or contains nuisance bacteria without adequate chemical disinfection with chlorine prior to the Cullar filter system. Cullar D+ filters only require automatic reconditioning cycles to maintain system effectiveness. The Cullar D+ filter media can last for several years in many applications but will eventually need replacement by your local Culligan dealer when it loses its ability to satisfactorily reduce chlorine and its associated taste and odor.

### Filtr-Cleer®

Smart HE Filtr-Cleer Water Filters use multi-layered media capable of reducing particulate matter down to 15-microns in particle size. The stratified layers of progressively finer filter media allow filtration through the entire depth of the media bed. This method of filtration minimizes the pressure loss associated with filters that use only one grade of filter media. The Filtr-Cleer will not effectively remove colloidal matter and turbidity below the micron rating, color caused by organics or dissolved solids.

Common applications follow:

- Reduction of suspended matter in the water.
- Reduction of particulate matter, such as clay, mud, and fine sediment.
- Prefiltration to remove oxidized iron prior to a water softening system.
- Reduction of light sand and sediments.
- After a retention tank when a Cul-Cleer® system with chemical feed is used for oxidation, coagulation, or flocculation.

Filtr-Cleer filters only require automatic reconditioning cycles to maintain effectiveness. The Filtr-Cleer media can last for several years in most applications. If pressure loss increases over time and can't be resolved by a reconditioning cycle the filter media may need replacement by your local Culligan dealer.

### Cullneu® Filter

Smart HE Water Filters with Cullneu Media can neutralize acidic water caused by low pH levels. Smart HE Filters can be used on water with a pH level from 5.2 to 6.8. Low pH levels are primarily caused by carbon dioxide in the water which forms carbonic acid. Carbonic acid can corrode copper piping resulting in blue/green staining, pipe damage and pin-hole leaks. Other metals in the plumbing system can also be corroded and dissolved including brass, lead and iron.

Cullneu media is a high-purity form of calcium carbonate that reacts with carbonic acid in the water to convert it to bicarbonate alkalinity. This increases the pH and alkalinity level of the water and reduces the potential for corrosion. If the pH level is between 5.0 and 6.0 then one part of Cullneu C media (magnesium oxide) should be mixed with 5 parts of Cullneu media to provide additional neutralizing capability. Cullneu media is a sacrificial mineral and will dissolve into the water over time. During the neutralization process some hardness is also added to the water. Cullneu filters perform automatic reconditioning cycles to maintain effectiveness. Since Cullneu media is consumed in the neutralization process the media level in the filter tank will need to be periodically replenished by your Culligan dealer to ensure the proper level of pH elevation.

## Iron-Cleer® Filter

Smart HE Iron-Cleer Filters are designed for iron and hydrogen sulfide removal. The two-tank Iron-Cleer system utilizes the process of aeration and oxidation followed by filtration with a catalytic filter media. The aeration process is initiated in the first tank by an integrated air compressor and shuttle valve that maintains and balances an airhead within the aeration tank. Water entering the aeration tank contacts air and starts the oxidation process. Iron begins to convert to the ferric form and hydrogen sulfide converts to sulfate and/or a filterable particle. Water exiting the aeration tank enters the filter tank where it contacts the Birm catalytic filter media to complete the oxidation and filtration process. An additional layer of Culligan G-50 filter media below the Birm offers additional filtration for smaller particles of oxidized iron and hydrogen sulfide.

Iron-Cleer filters only require automatic reconditioning cycles to maintain effectiveness. The Iron-Cleer media can last for several years in most applications before requiring replacement by your local Culligan dealer.

## Sulfur-Cleer® Filter

Smart HE Sulfur-Cleer Filters are designed for hydrogen sulfide and iron removal. The single-tank Sulfur-Cleer system utilizes the process of aeration and oxidation combined with catalytic activated carbon filtration. The aeration process is initiated in the filter tank by an integrated air compressor and shuttle valve that maintains and balances an airhead within the tank. Water entering the tank contacts air and starts the oxidation process. Hydrogen Sulfide and iron begin to oxidize to sulfate and/or a filterable particle. Water flows through the filter tank where it contacts the CIM catalytic activated carbon media to complete the oxidation and filtration process.

In some hydrogen sulfide applications, odors can develop within the system and an optional chlorine draw cycle can be utilized during the automatic reconditioning cycle to periodically sanitize the media bed if necessary. Culligan CIM media can last for several years before requiring replacement by your local Culligan dealer.

## Arsenic Reduction Filter®

Smart HE Arsenic Reduction Filters with Cull-AsX53 filter media are designed to reduce total arsenic levels up to 100 ppb on waters with a pH level ranging from 6.5 to 8.5. The system is certified to NSF Standard 53 for the reduction of Type III (trivalent) and Type V (pentavalent) arsenic valence states. The system utilizes Cull-AsX53 filter media, a high-capacity granular ferric oxide adsorptive media specifically designed to reduce arsenic. The system only requires automatic reconditioning cycles to maintain effectiveness. Periodic testing of the treated water for arsenic is necessary to determine when the Cull-AsX53 filter media has reached its usable capacity for arsenic reduction.

When the media life is exhausted the filter media will require replacement by your local Culligan dealer to restore the system's capability to effectively reduce arsenic. Your local Culligan dealer offers water testing services and programs to monitor water quality to ensure your system is performing properly.

# Arsenic Fact Sheet



## Arsenic – A naturally occurring water contaminant

Arsenic (As) is a naturally occurring contaminant found in many ground waters. It can exist in two forms identified by the oxidation state or valence. One form is pentavalent arsenic known as As(V), As(+5), and arsenate. The other form is trivalent arsenic known as As(III), As(+3), and arsenite. In natural ground water, arsenic may exist as pentavalent, trivalent arsenic, or a combination of both. More information about arsenic and its toxicity can be found by following the links below.

[https://www.epa.gov/sites/production/files/2014-03/documents/arsenic\\_toxfaqs\\_3v.pdf](https://www.epa.gov/sites/production/files/2014-03/documents/arsenic_toxfaqs_3v.pdf)

[https://19january2017snapshot.epa.gov/sites/production/files/2014-03/documents/arsenic\\_factsheet\\_cdc\\_2013.pdf](https://19january2017snapshot.epa.gov/sites/production/files/2014-03/documents/arsenic_factsheet_cdc_2013.pdf)

[https://legacy.azdeq.gov/envirom/water/dw/download/epa\\_arsenic.pdf](https://legacy.azdeq.gov/envirom/water/dw/download/epa_arsenic.pdf)

## Determining Arsenic levels in your water

Arsenic does not impart color, taste, or odor to water and can only be detected by analytical testing methods specifically for arsenic. Public water suppliers are required by EPA to regularly monitor water quality for the presence of arsenic. The results of those tests are published and available annually to the public in the form of a Consumer Confidence Report (CCR). The EPA recommends consumers with private water sources test their water annually. The test should include arsenic if it is known to be prevalent in your geographical area. Local health departments and state environmental agencies can offer guidance and provide a list of certified laboratories. The Culligan Analytical lab offers testing services through the Culligan dealer network for arsenic including total arsenic and speciation of Type III and Type V arsenic. Arsenic tests cost in the range of \$15 to \$30 per sample.

## Arsenic Reduction by Culligan Smart HE Arsenic Filters

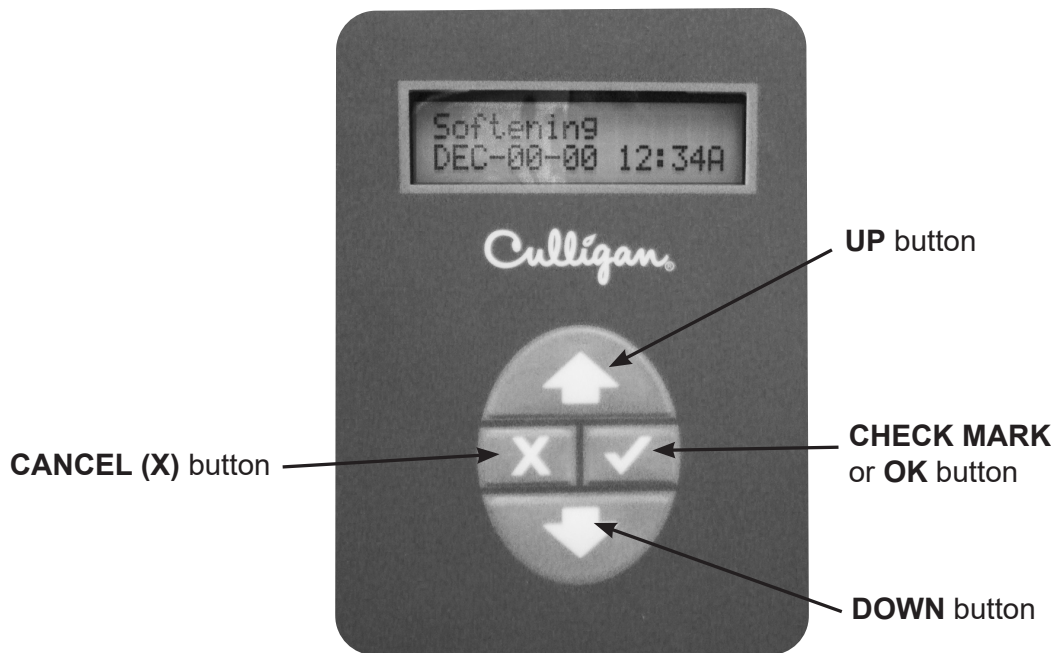
The Culligan Smart HE Arsenic Reduction Filter system is designed to reduce both pentavalent and trivalent forms of arsenic. This treatment system was tested under laboratory conditions as defined in NSF/ANSI 53 Drinking Water Treatment Units - Health Effects and was found to reduce an arsenic challenge concentration of .10 mg/l (100 ppb) arsenic to less than .01 mg/L (10 ppb) of arsenic. Challenge waters consisted entirely of pentavalent or trivalent arsenic at pH levels of 6.5 and 8.5 and each test challenge water was reduced to less than 0.010 mg/L (10 ppb) of arsenic. Treated water capacities for Smart HE Arsenic filters are 125,000 gallons for 12", 180,000 gallons for 14", and 250,000 gallons for 16" systems under standard testing conditions. Actual performance of the system may vary depending on the individual water quality conditions of the water supply. Following installation of this system, the consumer should have the treated water tested for arsenic to verify that arsenic reduction is being achieved and the system is functioning properly.

The Culligan AsX53 arsenic removal media component of this system must be replaced at the end of its useful life of 125,000 gallons for 12", 180,000 gallons for 14", and 250,000 gallons for 16" systems. The Culligan Smart HE Arsenic Filter controller monitors the volume of water treated by the system and alerts the customer by way of a visual display reading "Replace Media" when the end of the usable service life is approaching. An audible alarm on the Smart HE controller and an alert notification by the Culligan Connect App can also be used to monitor media life. Replacement Culligan AsX53 arsenic reduction media is available through your local Culligan dealer.

## Monitoring Arsenic levels in treated water.

Your local Culligan dealer can provide periodic arsenic testing services to monitor treated water quality including an automatic annual testing program offered through the Culligan Analytical Laboratory. Ask your local Culligan dealer for details and pricing for this convenient monitoring service.

# Menu Navigation



**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

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

The control must be returned to the HOME screen if settings are changed.

There are several conditions that will cause the control to initiate a reconditioning cycle. The screen displays **REGEN TONITE** when the control has signaled for a reconditioning cycle. Regenerating is displayed while the control is reconditioning. The following are conditions that will call for reconditioning:

## Reconditioning

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 reconditioning cycle 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** Reconditioning setting.

Follow either procedure to initiate a manual reconditioning cycle.

## Delayed Reconditioning

Screen Display	Range	Changing the Setting
FILTERING JAN-01-18 12:01P	N/A	1. At the <b>HOME SCREEN</b> , press <input checked="" type="checkbox"/> and hold for at least three seconds, then release the button.
REGEN TONITE JAN-01-18 12:01P	Regen Tonite	2. The first line of the display will toggle between <b>FILTERING</b> and <b>REGEN TONITE</b> .
REGEN OFF JAN-01-18 12:01P	Regen Off	3. To cancel a delayed reconditioning cycle, press and hold the <input checked="" type="checkbox"/> for three (3) seconds, then release the button. The screen displays <b>REGEN OFF</b> .

## Immediate Regeneration

Screen Display	Range	Changing the Setting
FILTERING JAN-01-18 12:01P	N/A	1. At the <b>HOME SCREEN</b> , press <input checked="" type="checkbox"/> and hold for at least five (5) seconds, then release the button.
REGEN NOW JAN-01-18 12:01P	Regen Now	2. The first line of the screen displays <b>REGEN NOW</b> . The filter will initiate an immediate reconditioning cycle.
REGENERATING JAN-01-18 12:01P	N/A	3. The first line of the screen displays <b>REGENERATING</b> .



## Standard Manual Reconditioning

Screen Display	Range	Changing the Setting
Filtering JAN-01-18 12:01P	N/A	1. This is the <b>HOME SCREEN</b> . Press any button except <b>X</b> to advance to the <b>MAIN MENU SCREEN</b> .
1) INFORMATION >2) REGEN/BYPASS	1-6	2. Press <b>↓</b> to 2) <b>REGEN/BYPASS</b> then press <b>✓</b> . The screen displays the Regen/Bypass settings.
REGEN/BYPASS >REGEN NOW	Regen Off Regen Now Regen Tonite Bypass	3. Press <b>✓</b> and <b>↑</b> or <b>↓</b> to change the setting. 4. The default is <b>REGEN NOW</b> . Press the <b>✓</b> to select this option to begin reconditioning cycle immediately. 5. If the screen displays <b>REGEN OFF</b> then the filter will not initiate a reconditioning cycle.. 6. If the screen displays <b>REGEN TONITE</b> then the filter will initiate a reconditioning cycle that night at 2:00 a.m. (or at the preset reconditioning time). The screen displays two status messages: <b>FILTERING</b> and <b>REGEN TONITE</b> . 7. If the screen displays <b>BYPASS</b> then for a specified time the filter will be bypassed. Press <b>✓</b> to select the total time the filter is to be in the bypass state.
MANUAL BYPASS >OFF	Off 30 (min) 60 90 120 180 Manual Bypass	8. Press <b>✓</b> and <b>↑</b> or <b>↓</b> to select the total time the filter is to be in the bypass state. 9. Press <b>✓</b> to accept this setting. The screen displays the Manual Mode menu.
1) INFORMATION >2) REGEN/BYPASS		10. Press <b>X</b> until the screen displays the <b>HOME SCREEN</b> and saves the settings.

## Culligan Connect™

The Culligan Connect™ interface is an intuitive mobile app and is available on both iOS and Android. Users will see their daily and weekly usage patterns graphically represented and instantly updated each time they open the app. In addition, alerts and the ability to put the unit in bypass mode or a reconditioning cycle from any location provides an all new level of control and convenience.

# Care & Cleaning

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

- Do not place heavy objects on top of the timer cover.
- Use only mild soap and warm water when cleaning the exterior of the system. Never use harsh, abrasive cleaning compounds or those which contain acid, such as vinegar, bleach and similar products.
- Important: Protect your water filter and the entire drainline from freezing temperatures.



**WARNING!**

**If your unit should freeze, do not attempt to disassemble it. Call your Culligan Dealer.**

- 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” advisory, the operation of the water filter should be discontinued until it is verified that the water is again potable. To do this, turn the blue knob in a clockwise position, then call your Culligan dealer to have your system sanitized before it is placed back into service.
- Should service, adjustment or trouble-shooting information be needed which is not covered in the Use and Care Guide, call your Culligan Dealer.

For parts and service availability please call your local independently operated Culligan dealer. For your nearest Culligan dealer, call (800) 285-5442.

# When & How to Bypass Your System

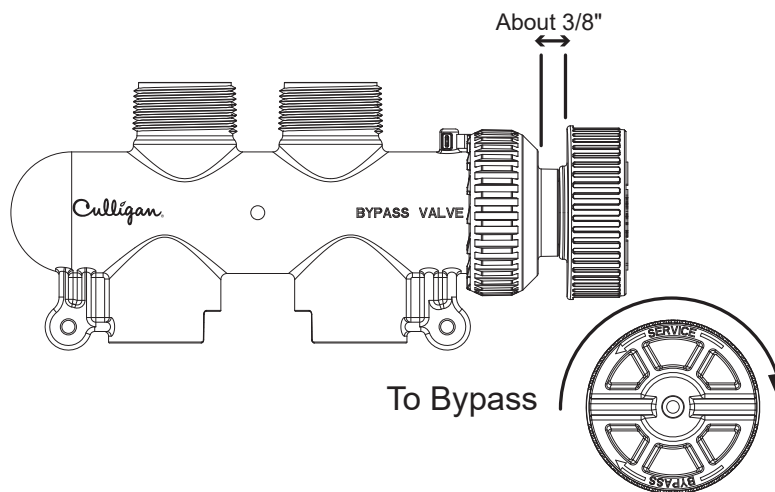
Normally, all water except outside lines passes through the water filter. There are times when the water filter should be bypassed, using the Cul-Flo-Valv® Bypass, a 3-valve bypass or remotely by the Culligan Connect App on your phone or tablet. You should bypass:

1. If lines to outside faucets do not bypass the water filter, and you do not want to waste softened 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 softened water service, turn the blue knob counter-clockwise.

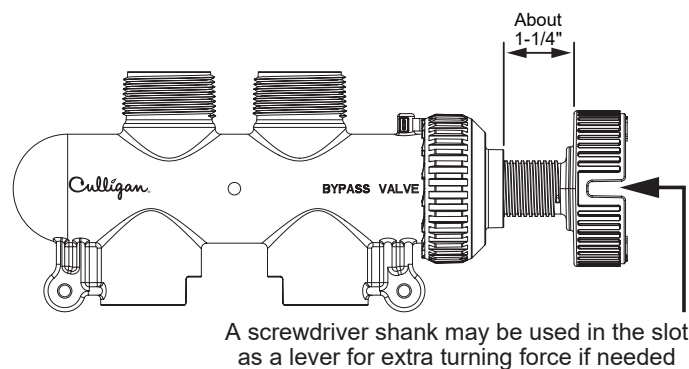
Figure 1. Bypass valve



## Bypassed

To BYPASS, turn the blue knob clockwise (see directional arrow on end of knob) until the knob stops as shown in [Figure 1](#). DO NOT OVERTIGHTEN!

Figure 2. Service valve



## Filter 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 2](#). DO NOT OVERTIGHTEN!

# Things to Check Before You Call For Service

If you unexpectedly experience a change in the quality of your water, make these simple checks before calling your Culligan dealer. One of the following conditions may be the reason for the change.

## Important

If any of the following conditions is found, the water filter should be manually reconditioned according to instructions on ["Reconditioning" 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 the correct time of day.

## Tripped Circuit Breaker

Check the house circuit breaker panel. Reset a tripped circuit breaker.

## Power Failure

Any interruption in your power supply or time change—such as daylight savings—will disrupt your filter's regeneration schedule by causing the timer to run off-schedule. Reset the timer to the correct time of day.

## Bypass Valves

Check to see if they are in the proper position. Cul-Flo-Valv<sup>®</sup> Bypass, if used, should be in the "Service" position (handle screwed out). If hand valves are used, see that inlet and outlet valve are opened and that the bypass valve is closed.

## No Water

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

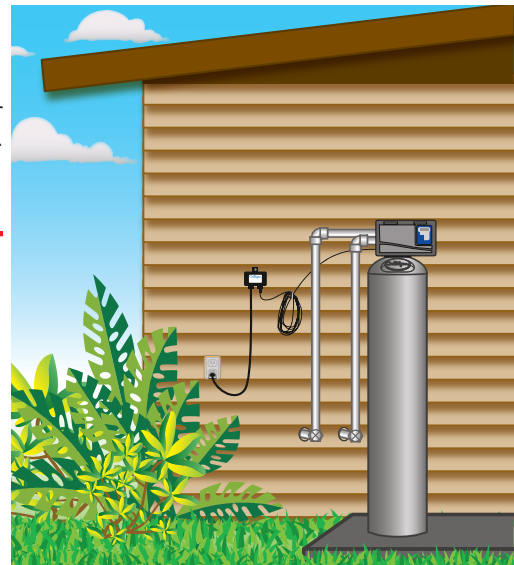
## Increased Usage

Guests, family additions, new water-using appliances, etc., will result in more water usage and may require additional programming by your local Culligan dealer. Please contact your local Culligan dealer.

## Outdoor Electrical and Power Supply

- The Installer should set the Media tank on a solid, level surface near plumbing, drain, and electrical connections. The Media tank and plumbing should be secured so the system can't be knocked over.
- The customer should provide a GFCI electrical outlet suitable for outdoor use that is NOT controlled by a switch that can be turned off accidentally.
- For outdoor installation, only use an outdoor rated power supply.
- **Power supply MUST be mounted on the wall at least 1 foot above ground level.** See [Figure 3](#).
- Properly ground to conform with all governing codes and ordinances.
- Observe all state and local electrical codes.
- P/N 01040206 plug-in power supply is rated for indoor installations only, do not use for outdoor installation.
- P/N 01040208 plug-in 20-foot power supply is included and rated for outdoor installations.
- P/N 01040209 optional 20-foot extension power supply cable is rated for outdoor installations (not included).
- For Outdoor use with a UL Listed Class 2 Direct Plug-in Power Unit only.

Figure 3. Outdoor installation



# Performance Data Sheets

## Culligan Aquasential Smart HE 9" Cullar, 10" Cullar, 9" Cullar Outdoor, 10" Cullar Outdoor Water Filter

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 W. Higgins Rd., Suite 1100  
 Rosemont, IL 60018 USA  
 (847) 430-2800  
[www.culligan.com](http://www.culligan.com)

Product: Culligan Aquasential Smart High Efficiency 9" Cullar, 10" Cullar, 9" Cullar Outdoor, and 10" Cullar Outdoor Water Filter

### Testing Conditions & Results:

Capacity:	120,000 gallons for 9" filters 180,000 gallons for 10" filters	Pressure:	60 psi
Service Flow Rate:	4.0 gpm @ 2.0 psi for 9" filters 5.9 gpm @ 5.0 psi for 10" filters	Temperature:	63 - 73° F (17 - 23° C)
		pH:	7.6

### Operating Conditions:

Operating Temp. Range:	33 - 120°F (1 - 50°C)	Water Press. Range:	20 - 125 psi (140 - 862 kPa)
Electrical Characteristics:	24 VDC, 21.6 Watts	Water Press. Range (Canada):	20 - 90 psi (140 - 620 kPa)

### Substance Reduction

While testing was performed under standard laboratory conditions, actual performance may vary.

Name of Substance	Influent Challenge Concentration	Reduction Requirement
Chlorine	2.0 mg/L ± 10%	≥ 50%

The Culligan Aquasential Smart High Efficiency Cullar filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 42 for the effective reduction of chlorine taste and odor up to 120,000 gallons for the 9" filter and 180,000 gallons for the 10" filter, as verified and substantiated by test data. 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.



**Performance Indicator:** If water flow decreases or a noticeable taste change occurs, a reconditioning cycle should be initiated. If conditions do not improve, contact your local Culligan dealer. They can determine if your filter requires servicing. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide (P/N 01040707) for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan dealer. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Buyer Signature \_\_\_\_\_ Date \_\_\_\_\_

Seller Signature \_\_\_\_\_ Date \_\_\_\_\_

## Culligan Aquasential Smart High Efficiency 9" Cullneu, 10" Cullneu, 9" Cullneu Outdoor, and 10" Cullneu Outdoor Water Filter

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 W. Higgins Rd., Suite 1100  
Rosemont, IL 60018 USA  
(847) 430-2800  
[www.culligan.com](http://www.culligan.com)

Product: Culligan Aquasential Smart High Efficiency 9" Cullneu, 10" Cullneu, 9" Cullneu Outdoor, and 10" Cullneu Outdoor Water Filter

### Testing Conditions & Results:

Pressure:	60 psi	Temperature:	63 - 73° F (17 - 23° C)
Service Flow Rate:	4.0 gpm @ 2.0 psi for 9" filters 5.9 gpm @ 3.0 psi for 10" filters	pH:	7.6

### Operating Conditions:

Operating Temp. Range:	33 - 120°F (1 - 50°C)	Water Press. Range:	20 - 125 psi (140 - 862 kPa)
Electrical Characteristics:	24 VDC, 21.6 Watts	Water Press. Range (Canada):	20 - 90 psi (140 - 620 kPa)

The Culligan Aquasential Smart High Efficiency Cullneu filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI/CAN Standard 61 for material safety requirement only. Not certified for contaminant reductions by WQA.



**Performance Indicator:** If water flow decreases or a noticeable taste change occurs a reconditioning cycle should be initiated. If conditions do not improve, contact your local Culligan dealer. They can determine if your filter requires servicing. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide (P/N 01040707) for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan dealer. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Buyer Signature \_\_\_\_\_ Date \_\_\_\_\_

Seller Signature \_\_\_\_\_ Date \_\_\_\_\_

# Culligan Aquasential Smart High Efficiency 9" Filtr-Clear, 10" Filtr-Clear, 9" Filtr-Clear Outdoor, and 10" Filtr-Clear Outdoor Water Filter

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 W. Higgins Rd., Suite 1100  
 Rosemont, IL 60018 USA  
 (847) 430-2800  
[www.culligan.com](http://www.culligan.com)

Product: Culligan Aquasential Smart High Efficiency 9" Filtr-Clear, 10" Filtr-Clear, 9" Filtr-Clear Outdoor, and 10" Filtr-Clear Outdoor Water Filter

## Testing Conditions & Results:

Pressure: 60 psi  
 Service Flow Rate: 7.6 gpm @ 15.0 psi for 9" filters  
 8.1 gpm @ 15.0 psi for 10" filters

Temperature: 63 - 73° F (17 - 23° C)  
 pH: 4.9 - 5.5

## Operating Conditions:

Operating Temp. Range: 33 - 120°F (1 - 50°C)  
 Electrical Characteristics: 24 VDC, 21.6 Watts

Water Press. Range: 20 - 120 psi (140 - 830 kPa)  
 Water Press. Range (Canada): 20 - 90 psi (140 - 620 kPa)

## Substance Reduction

While testing was performed under standard laboratory conditions, actual performance may vary.

Name of Substance	Influent Challenge Concentration	Reduction Requirement
Particulate, Class IV particles ( $\geq 15 \mu\text{m}$ to $< 30 \mu\text{m}$ )	At least 1,000 particles/mL	$\geq 85\%$

The Culligan Aquasential Smart High Efficiency Filtr-Clear filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 42 for Class IV ( $\geq 15 \mu\text{m}$  to  $< 30 \mu\text{m}$ ) particulate reduction, as verified and substantiated by test data. 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.



**Performance Indicator:** If water flow decreases or a noticeable taste change occurs a reconditioning cycle should be initiated. If conditions do not improve, contact your local Culligan dealer. They can determine if your filter requires servicing. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide (P/N 01040707) for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan dealer. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Buyer Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Seller Signature \_\_\_\_\_ Date \_\_\_\_\_

## Culligan Aquasential Smart High Efficiency 9" Filter Empty, 10" Filter Empty, 9" Filter Empty Outdoor, and 10" Filter Empty Outdoor Water Filter

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 W. Higgins Rd., Suite 1100  
 Rosemont, IL 60018 USA  
 (847) 430-2800  
[www.culligan.com](http://www.culligan.com)

Product: Culligan Aquasential Smart High Efficiency 9" Filter Empty, 10" Filter Empty, 9" Filter Empty Outdoor, and 10" Filter Empty Outdoor Water Filter

### Testing Conditions & Results:

Pressure: 60 psi  
 Service Flow Rate: 4.0 gpm @ 2.0 psi for 9" filters  
 5.9 gpm @ 3.0 psi for 10" filters

Temperature: 63 - 73° F (17 - 23° C)  
 pH: 4.9 - 5.5

### Operating Conditions:

Operating Temp. Range: 33 - 120°F (1 - 50°C)  
 Electrical Characteristics: 24 VDC, 21.6 Watts

Water Press. Range: 20 - 120 psi (140 - 830 kPa)  
 Water Press. Range (Canada): 20 - 90 psi (140 - 620 kPa)

The Culligan Aquasential Smart High Efficiency Empty Water filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI/CAN Standard 61 for material safety requirement only. Not certified for contaminant reductions by WQA. No media or underbedding has been qualified with these systems.



**Performance Indicator:** If water flow decreases or a noticeable taste change occurs a reconditioning cycle should be initiated. If conditions do not improve, contact your local Culligan dealer. They can determine if your filter requires servicing. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide (P/N 01040707) for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan dealer. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Buyer Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Seller Signature \_\_\_\_\_ Date \_\_\_\_\_



## Culligan Aquasential Smart High Efficiency 9" Filter Empty w/FP, 10" Filter Empty w/FP, 9" Filter Empty w/FP Outdoor, and 10" Filter Empty w/FP Outdoor Water Filter

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 W. Higgins Rd., Suite 1100  
Rosemont, IL 60018 USA  
(847) 430-2800  
[www.culligan.com](http://www.culligan.com)

Product: Culligan Aquasential Smart High Efficiency 9" Filter Empty w/FP, 10" Filter Empty w/FP, 9" Filter Empty w/FP Outdoor, and 10" Filter Empty w/FP Outdoor Water Filter

### Testing Conditions & Results:

Pressure: 60 psi  
Service Flow Rate: 4.0 gpm @ 2.0 psi for 9" filters  
5.9 gpm @ 3.0 psi for 10" filters

Temperature: 63 - 73° F (17 - 23° C)  
pH: 4.9 - 5.5

### Operating Conditions:

Operating Temp. Range: 33 - 120°F (1 - 50°C)  
Electrical Characteristics: 24 VDC, 21.6 Watts

Water Press. Range: 20 - 120 psi (140 - 830 kPa)  
Water Press. Range (Canada): 20 - 90 psi (140 - 620 kPa)

The Culligan Aquasential Smart High Efficiency Empty w/FP Water filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI/CAN Standard 61 for material safety requirement only. Not certified for contaminant reductions by WQA. No media or underbedding has been qualified with these systems.



**Performance Indicator:** If water flow decreases or a noticeable taste change occurs a reconditioning cycle should be initiated. If conditions do not improve, contact your local Culligan dealer. They can determine if your filter requires servicing. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide (P/N 01040707) for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan dealer. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Buyer Signature \_\_\_\_\_ Date \_\_\_\_\_

Seller Signature \_\_\_\_\_ Date \_\_\_\_\_

## Culligan Aquasential Smart HE 10" and 12" Iron-Clear Water Filter

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 W. Higgins Rd., Suite 1100  
Rosemont, IL 60018 USA  
(847) 430-2800  
[www.culligan.com](http://www.culligan.com)

Product: Culligan Aquasential Smart High Efficiency 10" and 12" Iron-Clear Water Filter

### Testing Conditions & Results:

Capacity:	1,400 gallons for 10" filters 2,000 gallons for 12" filters	Pressure:	20 - 60 psi
Service Flow Rate:	4.0 gpm @ 6.0 psi for 10" filters 4.0 gpm @ 4.0 psi for 12" filters	Temperature:	63 - 73° F (17 - 23° C)
		pH:	8.0

### Operating Conditions:

Operating Temp. Range:	33 - 120°F (1 - 50°C)	Water Press. Range:	20 - 60 psi (138 - 413 kPa)
Electrical Characteristics:	24 VDC, 21.6 Watts	Water Press. Range (Canada):	20 - 60 psi (138 - 413 kPa)

### Substance Reduction

While testing was performed under standard laboratory conditions, actual performance may vary. This system has been tested according to NSF/ANSI standard 42 for reduction of the substances listed below. 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.

Name of Substance	Influent Challenge Concentration	Reduction Requirement
Iron	3.0 - 5.0 mg/L	0.3 mg/L

The Aquasential Smart High Efficiency 10" and 12" Iron-Clear® filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 42 for the effective reduction of iron up to 1,400 gallons for the 10" filter and 2,000 gallons for the 12" filter as verified and substantiated by test data.



**Performance Indicator:** If water flow decreases or a noticeable taste change occurs a reconditioning cycle should be initiated. If conditions do not improve, contact your local Culligan dealer. They can determine if your filter requires servicing. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide (P/N 01040707) for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan dealer. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

Buyer Signature \_\_\_\_\_ Date \_\_\_\_\_  
Seller Signature \_\_\_\_\_ Date \_\_\_\_\_

## Culligan Aquasential Smart HE 10" Sulfur-Clear Water Filter

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 W. Higgins Rd., Suite 1100  
Rosemont, IL 60018 USA  
(847) 430-2800  
[www.culligan.com](http://www.culligan.com)

Product: Culligan Aquasential Smart High Efficiency 10" Sulfur-Clear Water Filter

### Testing Conditions & Results:

Capacity:	1,000 gallons	Pressure:	20 - 60 psi
Service Flow Rate:	5.0 gpm @ 4.0 psi	Temperature:	33 - 120° F (1 - 49° C)
		pH:	7.0 - 8.5

### Operating Conditions:

Operating Temp. Range:	33 - 120° F (1 - 49° C)	Water Press. Range:	20 - 60 psi (138 - 400 kPa)
Electrical Characteristics:	24 VDC, 21.6 Watts	Water Press. Range (Canada):	20 - 60 psi (138 - 400 kPa)

### Substance Reduction

This system has been tested according to NSF/ANSI standard 42 for reduction of the substances listed below. Testing was performed under laboratory conditions, actual results may vary.

Model	Name of 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" Quadra-Hull	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

The Aquasential Smart High Efficiency Sulfur-Clear™ 10" fiberglass and Quadra-Hull filters have been tested and certified by WQA against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 42 for the effective reduction of sulfur up to 1,000 gallons for the 10" filter as verified and substantiated by test data.

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.

**Performance Indicator:** If water flow decreases or a noticeable taste change occurs a reconditioning cycle should be initiated. If conditions do not improve, contact your local Culligan dealer. They can determine if your filter requires servicing. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide (P/N 01040707) for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan dealer. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.



Buyer Signature \_\_\_\_\_ Date \_\_\_\_\_  
Seller Signature \_\_\_\_\_ Date \_\_\_\_\_

# Culligan Aquasential Smart HE Arsenic 12", 14", and 16" Filter & Aquasential Smart HE Arsenic 12", 14", and 16" Outdoor Water Filter

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 W. Higgins Rd., Suite 1100  
Rosemont, IL 60018 USA  
(847) 430-2800  
[www.culligan.com](http://www.culligan.com)

Product: Culligan Aquasential Smart High Efficiency Arsenic 12", 14" and 16" filter & Aquasential Smart High Efficiency Arsenic 12", 14" and 16" Outdoor filter

## Testing Conditions & Results:

Capacity: 125,000 gal for 12" filters, 180,000 gal for 14" filters, and 250,000 gal for 16" filters  
Service Flow Rate: 5.0 gpm @ 2.0 psi for 12" filters  
7.5 gpm @ 5.0 psi for 14" filters  
10.0 gpm @ 10.0 psi for 16" filters

## Operating Conditions:

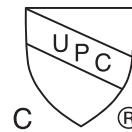
Operating Temp. Range: 33 - 120°F (1 - 49°C)      Water Press. Range: 20 - 120 psi (138 - 862 kPa)  
Electrical Characteristics: 24 VDC, 21.6 Watts      Water Press. Range (Canada): 20 - 90 psi (138 - 621 kPa)

## Substance Reduction

Testing was performed under standard laboratory conditions, actual performance may vary. This system has been tested according to NSF/ANSI 53 for reduction of the substances listed below. The concentration of the indicated substance 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 53.

Name of Substance	Influent Challenge Concentration (mg/L)	Maximum Permissible Product Water Concentration mg/L	Actual Minimum % Reduction	Actual Average % Reduction
Trivalent Arsenic pH 6.5	0.10 + 10%	0.010	94.36%	99.15%
Trivalent Arsenic pH 8.5	0.10 + 10%	0.010	96.12%	99.14%
Pentavalent Arsenic pH 6.5	0.10 + 10%	0.010	91.83%	97.18%
Pentavalent Arsenic pH 8.5	0.10 + 10%	0.010	93.82%	98.02%

The Culligan Aquasential Smart High Efficiency Arsenic 12", 14" and 16" filter and Aquasential Smart High Efficiency Arsenic 12", 14" and 16" Outdoor filter have been certified by IAPMO R&T against NSF/ANSI Standard 372, CSA B483.1, and NSF/ANSI Standard 53 for the effective reduction of total arsenic (pentavalent and trivalent) as verified and substantiated by test data.



**Performance Indicator:** If water flow decreases or a noticeable taste change occurs a reconditioning cycle should be initiated. If conditions do not improve, contact your local Culligan dealer. They can determine if your filter requires servicing. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Refer to the Specifications, Familiarization and Warranty section of this Owner's Guide (P/N 01040707) for more specific product information. To avoid contamination from improper handling and installation, your system should only be installed and serviced by your Culligan dealer. Performance will vary based on local water conditions. The substances reduced by this system are not necessarily in your water.

This system has been tested for the treatment of water containing pentavalent (also known as As(V), As(+5), or arsenate) and trivalent arsenic (also known as As(III), As(+3), or arsenite) at concentrations of 0.10 mg/L or less. This system reduces both forms of arsenic below EPA MCL. Please see the Arsenic Facts section of the Owners Guide for further information.

The arsenic removal component of this system must be replaced at the end of its useful life of 125,000 gallons for the Culligan Aquasential Smart High Efficiency Arsenic 12", 180,000 gallons for the Aquasential Smart High Efficiency Arsenic 14" and 250,000 gallons for Aquasential Smart High Efficiency Arsenic 16". The replacement of the removal component can be purchased from your local Culligan dealer.

Buyer Signature \_\_\_\_\_ Date \_\_\_\_\_

Seller Signature \_\_\_\_\_ Date \_\_\_\_\_

# Records & Data

## Important Information about your Culligan Water Filter System

Please fill in the information below for future reference. If you have any questions regarding your Culligan water system, please contact the dealer that installed your system for assistance.

Addition information may also be found by visiting: [www.culligan.com](http://www.culligan.com)

### System and Dealer Identification

System Name \_\_\_\_\_

Model Name: \_\_\_\_\_

Control Valve Model # \_\_\_\_\_

Control Valve Serial # \_\_\_\_\_

Date of Installation: \_\_\_\_\_

Tank Serial # \_\_\_\_\_

Culligan Dealer: \_\_\_\_\_

City/Town: \_\_\_\_\_

Dealer Phone # \_\_\_\_\_

State: \_\_\_\_\_

### System Settings

Time of Reconditioning Cycle \_\_\_\_\_ AM/PM

Recommended Culligan Service Interval:

Gallons Capacity Per Reconditioning: \_\_\_\_\_

Annual: \_\_\_\_\_ Bi-Annual: \_\_\_\_\_

Day Override / Interval: \_\_\_\_\_

\_\_\_\_\_ Replenish Neutralizing Media (Cullneu only)

Media Life (estimated): \_\_\_\_\_

Owner Maintenance:

\_\_\_\_\_ Replace Cartridge Filter(s)

\_\_\_\_\_ Replenish chlorine solution (Sulfur-Cleer only)

### Water Analysis

Hardness \_\_\_\_\_ grains/gallon

Total Dissolved Solids-TDS \_\_\_\_\_ mg/l

pH level (acidity) \_\_\_\_\_ S.U.

Alkalinity \_\_\_\_\_ grains/gallon

Iron \_\_\_\_\_ mg/l

Manganese \_\_\_\_\_ mg/l

Chlorine \_\_\_\_\_ mg/l

Hydrogen Sulfide(H<sub>2</sub>S) \_\_\_\_\_ mg/l

Nitrate \_\_\_\_\_ mg/l

Sodium \_\_\_\_\_ mg/l

Arsenic \_\_\_\_\_ mg/l

Chloride \_\_\_\_\_ mg/l

**NOTE!** mg/l (milligrams per liter) and ppm (parts per million) are equivalent units of measurement 1 grain = 17.1 mg/l

# Culligan Limited Warranty

## Culligan Aquasential Smart High Efficiency Water Conditioners

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

<b>For the LIFETIME of the original consumer purchaser</b>	The Quadra-Hull™ conditioner tank
<b>For a period of TEN YEARS</b>	The Aquasential Smart High Efficiency GBX2 circuit board, control valve body, excluding internal parts and the Fiberglass Conditioner Tank, if so equipped.
<b>For a period of FIVE YEARS</b>	Soft-Minder® meter
<b>For a period of ONE YEAR</b>	The entire conditioner

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 written instructions, or by the use of accessories or components which do not meet Culligan specifications, is not covered by this warranty. Warranty is void if system is installed outside a building without being rated for outdoor use. Refer to the specifications section in the Installation and Operating manual for application parameters.

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

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

### Culligan International Company

9399 W. Higgins Rd., Suite 1100  
Rosemont, IL 60018 USA  
1-800-CULLIGAN or 1-847-430-2800

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

