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Pre-Treatment  
Solutions



Membrane  
Solutions



Deionization  
Solutions



Storage  
Solutions



Distribution  
Solutions



# General Capabilities



Pre-Treatment  
Solutions



Membrane  
Solutions



Deionization  
Solutions



Storage  
Solutions



Distribution  
Solutions

# Culligan<sup>®</sup> MATRIX<sup>™</sup> SOLUTIONS<sup>™</sup>

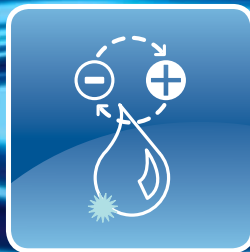
## The World's Premier Modular Industrial Water Treatment System



1. Pre-Treatment  
Solutions



2. Membrane  
Solutions



3. Deionization  
Solutions



4. Storage  
Solutions



5. Distribution  
Solutions

**Finally, an end-to-end solution from a single source.**

The Culligan Matrix Solutions<sup>™</sup> process identifies your individual business requirements and then creates a modular water treatment system that is customized to meet those needs.

It's this customization process that allows Culligan to offer you the most complete water treatment solution in the industry.

**Like any great solution, the Culligan Matrix Solutions has a lot to offer:**

**THE CULLIGAN MATRIX SOLUTIONS OFFERS: Efficiency**

- One of the fastest complete system to market
- A flexible modular treatment solution to help meet your needs
- A cost-effective design, considering both capital and operating costs
- A field professional will train your staff on maintenance and operation
- One simple solution and one provider all for your water treatment requirements

**Reduced Operating Costs and an Increased ROI**

- Reduction of TDS (total dissolved solids) will help extend the life of your equipment.
- More efficient equipment means reduced labor and maintenance costs.
- Reduce energy consumption, which could help you meet EPA guidelines.
- Protect the environment by reducing consumption of resources and chemicals, which can positively influence customer perceptions.
- Rigorous testing of each product helps promote quality and saves you time and money.

**Advanced Electronic Capabilities**

- Alarm recognitions
- Historical operating data logging
- U.S. Standard and Metric readings
- Remote monitoring options
- Programmable Logic Controllers (PLCs)
- Telemetry options — a low-cost alternative to PLCs



The tallest building in the world, the Burj Dubai, is one of several buildings in Dubai that has tapped Culligan to handle its Industrial water treatment needs



The above containerized mobile water treatment system produces water for ingestive cleaning of turbines for an energy and power application. Similar containerized systems are deployed in 10 locations in South America



This Culligan Reverse Osmosis Desalination Plant churns out approximately 2.4 million gallons of water per day



The Culligan depth filters produce 640 gpm of treated water for a military application and are designed to meet local wastewater discharge standards for suspended solids.

## A Custom Solution. A Complete Solution.

Each Culligan Matrix Solutions module is customized to cater to your specific industrial water treatment needs.

### 1. Pre-Treatment Solutions



**The first module** includes multi-media filtration, which reduces turbidity, odors, iron, manganese and heavy metals from water. Softening is also used to reduce water hardness, preventing scale and increasing the efficiency of process equipment.

- Filtration • Chemical Treatment • Anti-Scalants
- pH Adjustment • Softening – with brine-reclaim and AquaSensor Technology



### 2. Membrane Solutions

Multi-stage filtration for any need.



**The second module** features micro-, ultra- and nano-filtration, which reduce turbidity, suspended solids, and organic substances. This prepares water for effective disinfection and Reverse Osmosis. In addition, the second module features Reverse Osmosis membranes, which act as barriers to salts and organic substances including micro-contaminants, pesticides, pyrogens, and some viruses and bacteria. Reverse Osmosis can eliminate the need for chemical regenerants, further reducing costs.

- Micro-filtration • Ultra-filtration • Nano-filtration • Reverse Osmosis



### 3. Deionization Solutions



**The third module** features a charged ion exchange resin, which reduces mineral ions from water, given a wide variety of water quality. The result is polished water that is free of salts, eliminating the accumulation of scale.

- Portable Exchange Deionization (PEDI)
- Continuous Electro Deionization (CEDI)
- Automatic Deionization (Filter DI)



### 4. Storage Solutions



**The fourth module** offers purified water storage from 250 gallons to 100,000 gallons. Storage solutions allow our customers to store water for peak demand conditions. Customers can size equipment based on average water usage, which helps reduce capital costs.



### 5. Distribution Solutions



**The fifth module** offers delivery options, as well as further treatment of water, depending on your water quality requirements.

- Re-pressurization • Sanitization
- Sub-Micron filters • Distribution Systems
- Re-circulation Systems • Disinfection Systems
- UV, Ozone, or Chlorination





## We ask the right questions so you get the right solution.

Our consultative approach begins with a Culligan professional working with you to identify your specific water quality needs. By understanding these needs we can customize a system that gives you everything you require and nothing you don't – saving you money and helping you increase your ROI. At Culligan, we take pride in working closely with our customers so we can provide comprehensive industrial water treatment solutions.

## We have the right solution for your industry's needs

### Manufacturing

Every manufacturer has specific water quality requirements based on the need for consistent production. With our expansive line of technologies including pre-treatment, membrane filtration, polishing, storage, and distribution, we can customize a solution to meet your process water needs while also offering technologies that will help minimize wastewater discharge and help you meet strict EPA regulations.

### Energy & Power

A Culligan customized water treatment solution will allow you to increase the cycles of concentration and optimize the use of cooling tower make-up water resulting in significant cost savings. Furthermore, treating the make-up water with a Reverse Osmosis system will reduce dissolved solids and minimize scaling while various disinfection technologies, including biocides, can be used to prevent biological growth and promote continuous flow of water through the tower.

### Food & Beverage

Whether it's ingredient water, preparation water, process water, utility water or wastewater minimization, we have the diverse experience to understand your specific Food & Beverage water treatment needs.

### Oil & Gas

With our water system discovery tool, we help our Oil & Gas customers meet high-pressure steam generator water quality requirements. A Reverse Osmosis system is used to produce a high purity steam generator influent, increasing thermal efficiency and reducing maintenance cost. Multi-media filters ahead of the RO system will increase RO life and produce significant cost savings.

### Healthcare

Reverse Osmosis units, mixed bed deionization systems and continuous electro-deionization systems can be used to meet the high purity water quality requirements in the Healthcare industry. Additionally, water treatment can be used in sanitization processes to prevent the growth of bacteria, mold, algae and fungi in equipment.

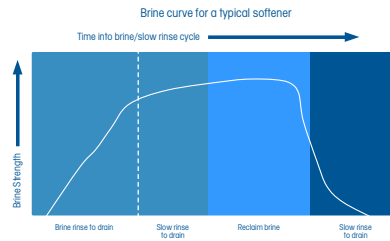
### Applications

- Arsenic Removal
- Bio-pharmaceutical
- Boiler Treatment
- Chiller Water Conditioning
- Chip/PCB Manufacturing
- Cooling Towers
- Containerized Mobile Systems
- Desalination
- Drinking Water
- Genetic Research
- Gray Water Reclaim/Recycle
- Heavy Metals Removal
- HVAC
- Nitrate Removal
- Oil Platform
- Painting/Plating
- Process Water
- Potable Water
- Ultra-pure Water
- Waste Minimization

## Place your industrial water treatment needs in the hands of a global leader

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.

**Achieve better ROI by using softening with brine reclaim.**



Culligan's softening modules with brine reclaim improve the efficiency of the water treatment system and reduce salinity of wastewater.

Membrane Technology	Micro-Filtration	Ultra-Filtration	Nano-Filtration	Reverse Osmosis
Suspended Solids	●			
Macromolecules, TOC, Colloids, Silica	●	●		
Multivalent ions Ca <sup>++</sup> , Mg <sup>++</sup> , SO <sub>4</sub> <sup>-</sup> , CO <sub>3</sub> <sup>-</sup>	●	●	●	
Monovalent ions Na <sup>+</sup> , Cl <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , HCO <sub>3</sub> <sup>-</sup>	●	●	●	●
Water and dissolved gases	●	●	●	●

Your water influent can determine your specific need for Culligan's Micro-filtration, Ultra-Filtration, and Nano-Filtration, which prepare the water treatment system for the most advanced Reverse Osmosis. A Culligan applications engineer (or professional) can help you determine which membrane solution will reduce the specific chemicals in your water.



**Reclamation**

- Could minimize or reduce wastewater discharge and associated costs
- May assist in meeting compliance requirements
- Reduce consumption of water by re-using reclaimed water in other plant processes
- Realize improved ROI

# Matrix Solutions.

## For calculated success.

### Cooling Tower Savings

RO and/or Nano-filtration can improve the function of your cooling

COOLING TOWER ESTIMATOR		
	Present	Using RO water
Tonnage Rating	1200	1200
Conductivity - Make-up water (µS/cm)	500	25
Conductivity - Recirc water (µS/cm)	1000	500
T of water in the tower - deg F	10	10
Drift Loss - % (0.1 to 0.2 is normal)	0.1	0.1
Operation as a percentage of capacity	100	100
Cooling tower basin capacity - gallons	1000	1000
Operating hours per day	24	24
Operating weeks per year	52	52
Water cost - \$/cu ft	\$0.00130	\$0.00130
Sewer cost - \$/cu ft	\$0.04400	\$0.04400
<b>Gross Annual Water Cost Saving using RO</b>		\$44,326.20
RO Pump HP		20
RO Pump Electrical Usage - kwh/day		358.08
Power Cost - \$/kwh		0.08
RO Power Cost per day		\$28.65
Annual Power Cost		\$10,455.94
<b>Net Annual Cost Savings using RO</b>		\$33,870.26

Brine Reclaim Calculator		
Softener Model	CSM 900-3	
Resin quantity per tank (ft2)	30.0	
Salt cost per pound (\$)	0.12	
Daily usage (gpd)	144,000	
Hardness (gpg)	7.00	
Hours of operation per day	24	
Salt dosage (lbs/ft2)	10	
Total Exchange capacity (grains)	750,210	
Capacity required per day (grains)	1,008,000	
No. of regens per year	490.42	
	<b>Standard brine system</b>	<b>Brine reclaim system</b>
Salt dosage (lbs/ft3)	10.0	7.5
Salt used per regen (lbs)	300.0	225.0
Vol. to drain per regen (gal)	1,600	1,500
Cost per regeneration (\$)	36.00	27.00
Annual cost of regeneration (\$)	17,655	13,241
Savings per regeneration (\$)	-	9.00
Annual savings (\$)	-	4,414



# Culligan<sup>®</sup> MATRIX<sup>™</sup> SOLUTIONS<sup>™</sup>

## The World's Premier Commercial Water Treatment System



### Manage your water with Culligan Matrix Solutions

Culligan Matrix Solutions brings together application engineering, innovative product and technical service to reduce operating costs and improve customer experiences. For every use—from water that mists produce to the water used in hotel washing machines—Culligan's Matrix Solutions provide commercial customers a complete solution that's also cost effective.

## Culligan Matrix Solutions Offer:

### Reduced Operating Costs and Improved Customer Experiences

- Reduced scale build up on equipment and fixtures
- Increased lifespan of equipment and lower maintenance costs
- Reduced utility, detergent and chemical costs
- Reduced downtime and maintenance repairs
- Overall improved customer experiences

### Efficiency

- A modular end-to-end treatment solution that can be customized to help meet your specific needs
- A flexible and expandable system to help meet your changing needs
- A cost effective design considering both capital and operating costs
- Preventative service programs to maintain the efficiency of your equipment
- One of the fastest complete systems to market
- One simple solution and one provider for all your water treatment requirements

### Advanced Electronic Capabilities

- Alarm recognition
- Historical operating data logging
- Real time statistics / US Standard and Metric readings
- Remote monitoring options
- Telemetry options
- Culligan exclusive features – brine reclaim, progressive flow, aqua sensor



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## We have the right solution for your business's needs

### Food Service / Restaurants

The flexible Culligan Matrix Solutions systems save restaurants money, reduce use of chemicals and detergents and can increase overall equipment efficiency and life. Boilers, water heaters, dishwashers, steamers, steam tables, beverages and ice machines all benefit from treated water.

### Hospitality / Lodging

Culligan customers in the hospitality industry can realize substantial benefits by using treated water in boilers hot water heaters, cooling towers, food service, laundry and vended services. Culligan Matrix Solutions water treatment systems help uphold quality standards, while adding value to your business.

### Educational Facilities

Culligan Matrix Solutions systems give educational facilities high-quality water for a wide variety of applications. Across all uses, installing a customized Culligan Matrix Solutions system can reduce utility bills, labor costs and consumption of detergents and chemicals.

### Healthcare Professionals

Clinics, patients and healthcare workers get more than just great-tasting water from Culligan Matrix Solutions systems. Each customized solution allows Culligan to tailor water treatment to your particular needs for substantial cost savings and improved patient and employee experiences.

### Manufacturers

Culligan knows a consistent flow of high-quality water is vital for successful manufacturing. Culligan Matrix Solutions offers options such as reverse osmosis, softening, ion exchange, de-ionization and multi-media filtration to produce high quality influent to promote consistent production. With one of the fastest timelines from design to installation, Culligan stands out by delivering advanced water treatment to small manufacturers valuing consistent production.

### Grocery

Culligan is a global leader in water treatment solutions, providing advanced technologies and cost-effective solutions for grocery, discount stores and other retailers. By integrating Culligan Matrix Solutions into your store, you will receive leading edge equipment options and global industry expertise. A Culligan Matrix Solution will help you provide your customers and enhanced shopping experience.

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# Pre-Treatment Products

## Softeners



Pre-Treatment  
Solutions



Membrane  
Solutions







Deionization  
Solutions



Storage  
Solutions



Distribution  
Solutions

Model	HE 1.5 Twin	HE 1.5	Hi-Flo 3	Hi-Flo 3E	Hi-Flo xN Series	CSM	Hi-Flo 50
							
Flow Rate (per tank)	23 - 37 GPM	23 - 37 GPM	22 - 100 GPM	45 - 280 GPM	67 - 148 GPM	67 - 259 GPM	108 - 400 GPM
*Capacity (per tank)	Up to 210 K	Up to 210 KGR	Up to 450 KGR	Up to 1.2 M grains per tank	Up to 900 KGR	Up to 900 KGR	Up to 2 M grains per tank
Pipe Size	1.5"	1.5"	1.5" & 2"	2" & 3"	2"	2" & 3"	3" & 4"
Features							
Valve Type	Top Mount	Top Mount	Top Mount	Top Mount	Side Mount Plastic Valve Nest	Side Mount Multi-Port Diaphragm	Side Mount Valve Vest
Valve Body Material	Plastic	Plastic	Brass	Brass	Plastic	Cast Iron	Galvanized Steel Valve Harness
Tank Type	Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass / ASME Steel	Steel / ASME Steel	Steel / ASME Steel
Control	Culligan Smart Controller (GBE)	Culligan Smart Controller (GBE)	Entry Level Mechanical	Culligan Smart Controller (GBE)	Culligan Smart Controller (GBE)	Culligan Smart Controller (GBE)	Culligan Smart Controller (GBE)
Regeneration Initiation							
Time-Clock	√	√	√	√	√	√	√
Meter	√	√		√	√	√	√
Aqua-Sensor	√	√		√	√	√	√
Alternating	√			√	√	√	√
Duplex	√	√		√	√	√	√
Parallel		√		√	√	√	√
Progressive Flow		√		√	√	√	√
Local Wireless Remote Monitor	√	√		√	√	√	√
Central Remote Monitoring	√	√		√	√	√	√

\*Capacity at 15lbs/cu. ft.



# The Culligan® High Efficiency (HE) Twin Water Softener System



## EXAMPLES OF MARKETS SERVED:

CLINICS  
EDUCATIONAL FACILITIES  
ENERGY & POWER  
FOOD & BEVERAGE PRODUCTION  
FOOD SERVICE/RESTAURANTS  
GROCERY  
HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL  
HOSPITALITY/LODGING  
MANUFACTURING  
MUNICIPAL DRINKING WATER  
OIL & GAS

## A Continuous Flow of Soft Water with a Smart Choice

The High Efficiency (HE) Twin softener with patented technology delivers improved efficiency to reduce operating costs. The HE Twin softener reduces hard water contaminants\*, reducing scale build-up that affect equipment performance. The HE twin configuration consists of two independent mineral tanks, which provide a continuous flow of soft water 24 hours a day. With the Culligan Smart Controller, available on the HE Twin, the softener adjusts to influent water conditions and regenerates based on need. Customers can also monitor their water treatment system performance, consumable usage, and maintenance needs, at a single site or across multiple ones 24 hours a day.

The HE Twin softener is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to learn more about the HE Twin softener system.

\*contaminants are not necessarily in your water.

## Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



**Pre-Treatment  
Solutions**



**Membrane  
Solutions**



**Deionization  
Solutions**



**Storage  
Solutions**



**Distribution  
Solutions**

## Warranty

Culligan's HE water softeners are backed by a limited 1-year warranty against defects in materials, workmanship, and corrosion. The plastic conditioner tank has a 5-year warranty. See printed warranty for details.†

Some localities have corrosive water. A softener cannot correct this condition, so its printed warranty disclaims liability for corrosion of plumbing lines, fixtures, or water-using equipment. If you suspect corrosion, your independently operated Culligan dealer has equipment to help control the problem.

† See printed warranty for details. Culligan will provide a copy of the warranty upon request.

## Examples of Softener Applications

- RO/DI Pretreatment
- Apartment buildings, assisted living facilities and hotels — Quality water for laundry, dishwashers, boilers
- Office buildings — For heating plant pretreatment, tenant convenience, general housekeeping
- Restaurants — For dishwashing, cleaning material savings, scale reduction
- Car washes — Quality results, detergent and water heating savings, scale reduction
- Grocery/Retail — Quality water for aesthetics and help extend equipment life
- Light industry — For process and make-up water, boiler and cooling system pretreatment, general housekeeping

## Standard Features

- Alternating Twin Tank Design — allows for a continuous supply of softened water
- Culligan's Smart Controller — More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls a variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Regeneration initiation by choice or combination of time clock, flow meter or Aqua-Sensor
- Telemetric Capability
- Corrosion Resistant Positive Motor-Driven Regeneration Valve — Motor driven piston is reliable under server water conditions, resists dirt, iron and turbidity
- Corrosion Resistant Tanks — Made from fiberglass reinforced polyester
- Under-drain design enhances softening capacity and reduces pressure loss
- Electronic By-Pass - The softener can be by-passed electronically either from the unit or from the remote monitor and automatically goes back into service after a pre-set time.
- Multi-Poppet Design — Allows for easy service and increases durability and valve life
- Flow Meter
- UL/CUL Ratings

## Optional Features & Accessories

- Dubl-Safe™ Brine System for softeners — Positive overflow protection Automatic refill control is backed up by shutoff float valve to reduce chance of overflow
- Patented Aqua-Sensor® Control — Initiates regeneration only when needed based upon water hardness. Automatically adjusts to changes in raw water hardness and water consumption
- Smart Brine Tank Probe - monitors salt usage and communicates how much salt is left.
- Skid Mounted System
- Remote Display
- RS232, RS485, Modbus PLC Output

## System Specifications

Specification	US	Metric
Pipe Size, All Units	1.5"	
Maximum Operating Pressure	20–125 psig	135–860 kPa
Power Voltage Frequency Phase	24 50/60 Hz <sup>1</sup>	
Feed Water Temperature	33–120° F	0–48° C
Power Consumption	3/100 Watts	
Vacuum	None <sup>2</sup>	
Turbidity	5 NTU, max. <sup>3</sup>	
Chlorine	1 mg/L, max. <sup>3</sup>	
Iron	5 mg/L	

<sup>1</sup> 120 Volt/24 Volt CUL/UL listed Transformer Included.

<sup>2</sup> Tank warranty is void if subject to vacuum.

<sup>3</sup> See media specification for details.

## HE Water Softener System

Model	Resin Qty. (ft <sup>3</sup> /L)	Flow Rates (gpm/lpm)		Tank Size*** (in/mm)	
		Continuous*	Peak**	Softener	Brine****
HET-060	2	25.1	31.5	14 x 47	18 x 38
	56.6	95.0	119.2	356 x 1,194	457 x 965
HET-090	3	26.6	35.2	16 x 53	24 x 40
	85	100.7	133.2	406 x 1,346	610 x 1,016
HET-120	4	23.3	31.8	16 x 65	24 x 40
	113.3	88.2	120.4	406 x 1,651	610 x 1,016
HET-150	5	27.2	35.8	18 x 65	24 x 50
	141.6	103.0	135.5	457 X 1,651	610 X 1270
HET-210	7	28	37.4	21 X 62	24 X 50
	198.2	106.0	141.6	533 X 1,575	610 X 1,270

\*Flow rate at a 15 psi pressure loss.

\*\*Flow rate at a 25 psi pressure loss.

\*\*\*Dimensions are diameter by tank height.

\*\*\*\*Brine systems are optional.

Flow rates shown are per tank.

Low flow channeling (flow rates less than 0.5 gallons per minute per cubic foot of resin) may cause hardness leakage into effluent.

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 FOOD SERVICE/RESTAURANTS  
 GROCERY  
 HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL  
 HOSPITALITY/LODGING  
 MANUFACTURING  
 MUNICIPAL DRINKING WATER  
 OIL & GAS

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**Pre-Treatment Solutions**



Membrane Solutions



Deionization Solutions



Storage Solutions



Distribution Solutions

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- Light industry — For process and make-up water, boiler and cooling system pretreatment, general housekeeping

## Standard Features

- Single or Multiple Tank Configurations — Hardness removal capacities up to 235,000 grains per tank
- Culligan's Smart Controller — More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls a variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Regeneration initiation by choice or combination of time clock, flow meter or Aqua-Sensor
- Telemetric Capability
- Corrosion Resistant Positive Motor-Driven Regeneration Valve — Motor driven piston is reliable under server water conditions, resists dirt, iron and turbidity
- Corrosion Resistant Tanks — Made from fiberglass reinforced polyester
- Under-drain design enhances softening capacity and reduces pressure loss
- Electronic By-Pass - The softener can be by-passed electronically either from the unit or from the remote monitor and automatically goes back into service after a pre-set time.
- Multi-Poppet Design — Allows for easy service and increases durability and valve life
- Flow Meter
- UL/CUL Ratings
- Internally blocked Progressive Flow Systems

## Optional Features & Accessories

- Dubl-Safe™ Brine System for softeners — Positive overflow protection Automatic refill control is backed up by shutoff float valve to reduce chance of overflow
- Patented Aqua-Sensor® Control — Initiates regeneration only when needed based upon water hardness. Automatically adjusts to changes in raw water hardness and water consumption
- Smart Brine Tank Probe - monitors salt usage and communicates how much salt is left.
- Skid Mounted System
- Remote Display
- RS232, RS485, Modbus PLC Output

## System Specifications

Specification	US	Metric
Pipe Size, All Units	1.5"	
Maximum Operating Pressure	20–125 psig	135–860 kPa
Power Voltage Frequency Phase	24 50/60 Hz <sup>1</sup>	
Feed Water Temperature	33–120° F	0–48° C
Power Consumption	22 Watts	
Vacuum	None <sup>2</sup>	
Turbidity	5 NTU, max. <sup>3</sup>	
Chlorine	1 mg/L, max. <sup>3</sup>	
Iron	5 mg/L	

<sup>1</sup> 120 Volt/24 Volt CUL/UL listed Transformer Included.

<sup>2</sup> Tank warranty is void if subject to vacuum.

<sup>3</sup> See media specification for details.

<sup>4</sup> Influent Hardness upflow systems — limit 30 gpg

## HE Water Softener System

Model			Resin Qty. (ft <sup>3</sup> /L)	Flow Rates (gpm/lpm)		Tank Size*** (in./mm)	
Upflow	Downflow	Progressive Flow		Continuous*	Peak**	Softener	Brine****
HE 1.5 UF 060	HE-060	HE 1.5 PF 060	2	25.1	31.5	14 x 47	18 x 38
			56.6	95.0	119.2	356 x 1,194	457 x 965
HE 1.5 UF 090	HE-090	HE 1.5 PF 090	3	26.6	35.2	16 x 53	24 x 40
			85	100.7	133.2	406 x 1,346	610 x 1,016
HE 1.5 UF 120	HE-120	HE 1.5 PF 120	4	23.3	31.8	16 x 65	24 x 40
			113.3	88.2	120.4	406 x 1,651	610 x 1,016
HE 1.5 UF 150	HE-150	HE 1.5 PF 150	5	27.2	35.8	18 X 65	24 X 50
			141.6	103.0	135.5	457 X 1,651	610 X 1270
HE 1.5 UF 210	HE-210	HE 1.5 PF 210	7	28	37.4	21 X 62	24 X 50
			198.2	106.0	141.6	533 X 1,575	610 X 1,270

\*Flow rate at a 15 psi pressure loss.

\*\*Flow rate at a 25 psi pressure loss.

\*\*\*Dimensions are diameter by tank height.

\*\*\*\*Brine systems are optional.

Flow rates shown are per tank.

Low flow channeling (flow rates less than 0.5 gallons per minute per cubic foot of resin) may cause hardness leakage into effluent.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



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## An Entry-Level Solution for High-Quality Water

The Culligan Hi-Flo 3 softener is an entry-level system that reduces the contaminants\* in water used for industrial processes and commercial consumption. The system requires only simple set up and maintenance to help deliver quality water.

The Hi-Flo 3 softener is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Consult with a Culligan representative to create your solution.

\*contaminants may not necessarily be in your water

### EXAMPLES OF MARKETS SERVED:

- CLINICS
- EDUCATIONAL FACILITIES
- ENERGY & POWER
- FOOD & BEVERAGE PRODUCTION
- FOOD SERVICE/RESTAURANTS
- GROCERY
- HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL
- HOSPITALITY/LODGING
- MANUFACTURING
- MUNICIPAL DRINKING WATER
- OIL & GAS

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation



**Pre-Treatment  
 Solutions**



Membrane  
 Solutions



Deionization  
 Solutions



Storage  
 Solutions



Distribution  
 Solutions

## Warranty

Culligan's Hi-Flo 3 water softeners are backed by a limited 1-year warranty against defects in materials, workmanship, and corrosion. The plastic conditioner tank has a 5-year warranty. See printed warranty for details. †

Some localities have corrosive water. A softener cannot correct this condition, so its printed warranty disclaims liability for corrosion of plumbing lines, fixtures, or water-using equipment. If you suspect corrosion, your independently operated Culligan dealer has equipment to help control the problem.

†See printed warranty for details. Culligan will provide a copy of the warranty upon request.

## Examples of Softener Applications

- RO/DI Pretreatment
- Apartment buildings, assisted living facilities and hotels — Quality water for laundry, dishwashers, boilers
- Office buildings — For heating plant pretreatment, tenant convenience, general housekeeping
- Restaurants — For dishwashing, cleaning material savings, scale reduction
- Car washes — Quality results, detergent and water heating savings, scale reduction
- Light industry — For process and make-up water, boiler and cooling system pretreatment, general housekeeping

## Standard Features

- Corrosion Resistant Tanks — Made from fiberglass-reinforced polyester, additional reinforcement from continuous fiberglass overwrap
- Under-drain design enhances softening capacity and reduces pressure loss
- Softening Media — High quality resin provides stability and uniform size for top performance and long life
- Cycle Controllers — Regeneration cycle may be initiated by timer
- NSF 61 Rating
- Positive Motor-Driven Regeneration Valve — Motor driven piston is reliable under severe water conditions, resists dirt, iron, turbidity
- Automatic Brine Control — Automatically measures the correct amount of brine

## Optional Features & Accessories

- Dubl-Safe™ Brine System — Positive overflow protection Automatic refill control is backed up by shutoff float valve to reduce chance of overflow

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	30–120 psig	210–830 kPa
Power Voltage Frequency Phase	120 Volts 50/60Hz	
Turbidity	5.0 NTU, max. <sup>2</sup>	
Chlorine	1.0 mg/L, max. <sup>2</sup>	
Iron	5 mg/L	
Vacuum	None <sup>1</sup>	
Feed Water Temperature	40–100° F	4–38° C

<sup>1</sup>Tank warranty is void if subject to vacuum

<sup>2</sup>See media specification for details

## Hi-Flo 3 Water Softener System

Model	Resin Qty. (ft <sup>3</sup> /L)	Pipe Size (in/mm)	Flow Rates (gpm/lpm)		Tank Size (in/mm)	
			Continuous*	Peak**	Resin Tank	Brine Tank***
HC-60-1.5T	2	1.5	22	29	12 x 52	18 x 38
	57	38	83	110	305 x 1,321	457 x 965
HC-90-1.5T	3	1.5	29	37	14 x 65	24 x 40
	85	38	110	140	356 x 1,651	610 x 1,016
HC-120-1.5T	4	1.5	29	37	16 x 65	24 x 40
	113	38	110	140	406 x 1,651	610 x 1,016
HC-120-2T	4	2	45	60	16 x 65	24 x 50
	113	51	170	227	406 x 1,651	610 x 1,270
HC-150-1.5T	5	1.5	40	55	18 x 65	24 x 50
	142	38	151	208	457 x 1,651	610 x 1,270
HC-150-2T	5	2	60	78	18 x 65	24 x 50
	142	51	227	295	457 x 1,651	610 x 1,270
HC-210-2T	7	2	58	76	21 x 62	24 x 50
	198	51	220	288	533 x 1,575	610 x 1,270
HC-300-2T	10	2	65	85	24 x 72	30 x 50
	283	51	246	322	610 x 1,829	762 x 1,270
HC-450-2	15	2	75	100	30 x 72	30 x 50
	425	51	284	379	762 x 1,829	762 x 1,270

\*Flow rate of a 15 psi pressure loss.

\*\*Flow rate of a 25 psi pressure loss.

\*\*\*Brine systems are optional. Size shown is size most commonly selected.

Flow rates shown are per tank. Low flow channeling (flow rates less than 0.5 gallons per minute per cubic foot of resin) may cause hardness leakage into effluent.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



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## The Culligan Hi-Flo® 3e Series Water Softener System



### EXAMPLES OF MARKETS SERVED:

CLINICS  
EDUCATIONAL FACILITIES  
ENERGY & POWER  
FOOD & BEVERAGE PRODUCTION  
FOOD SERVICE/RESTAURANTS  
GROCERY  
HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL  
HOSPITALITY/LODGING  
MANUFACTURING  
MUNICIPAL DRINKING WATER  
OIL & GAS

### An Efficient, Flexible, and Scalable Water Treatment System

Improve your water quality regardless of your water usage quantity. The Culligan Hi-Flo 3e water softener effectively reduces contaminants\* that affect water quality such as scale and stain-causing minerals. The Culligan-exclusive Smart Controller allows you to efficiently set up and manage your water treatment. Using optional accessories, monitor water usage data, such as the flow rate and volume, and regenerate the system as needed, saving resources and money.

The Hi-Flo 3e softener is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to learn more about the Hi-Flo 3e softener system.

\*contaminants are not necessarily in your water.

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



**Pre-Treatment  
Solutions**



Membrane  
Solutions



Deionization  
Solutions



Storage  
Solutions



Distribution  
Solutions

## Warranty

Culligan's Hi-Flo 3e water softeners are backed by a limited 1-year warranty against defects in materials, workmanship, and corrosion. The plastic conditioner tank has a 5-year warranty. See printed warranty for details.†

Some localities have corrosive water. A softener cannot correct this condition, so its printed warranty disclaims liability for corrosion of plumbing lines, fixtures, or water-using equipment. If you suspect corrosion, your independently operated Culligan dealer has equipment to help control the problem.

† See printed warranty for details. Culligan will provide a copy of the warranty upon request.

## Upgrade Options

- Retrofit any existing Hi-Flo 3 system.
- Retrofit any existing Fleck® 2850, 2900, 3150 and 3900 system.
- Provides full Culligan Smart Controller functionality.
- Add exclusive features such as progressive flow or brine reclaim to existing systems.
- Can be used with virtually any Hall effect type flow meter.
- Additional kits are available to convert existing Fleck flow meter.

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	30–120 psig	210–830 kPa
Power Voltage Frequency Phase	120/24 V AC <sup>1</sup> 50/60Hz	
Power Consumption	3/100 Watts Min/Max	
Vacuum	None <sup>2</sup>	
Feed Water Temperature	40–100° F	4-38° C

<sup>1</sup> 120 Volt/24 Volt CUL/UL listed Transformer Included.

<sup>2</sup> Tank warranty is void if subject to vacuum.

<sup>3</sup> See media specification for details.

## Examples of Softener Applications

- RO/DI Pretreatment
- Apartment buildings, assisted living facilities and hotels — Quality water for laundry, dishwashers, boilers
- Office buildings — For heating plant pretreatment, tenant convenience, general housekeeping
- Restaurants — For dishwashing, cleaning material savings, scale reduction
- Car washes — Quality results, detergent and water heating savings, scale reduction
- Grocery/Retail — Quality water for aesthetics and help extend equipment life

- Light industry — For process and make-up water, boiler and cooling system pretreatment, general housekeeping

## Standard Features

- Single or Multi-Tank Configurations — Hardness removal capacities up to 1,200,000 grains per tank, and continuous flow rates up to 75 gpm (2") or 215 gpm (3") per tank
- Culligan's Smart Controller — More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls. A variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Telemetric Capability
- Regeneration initiated by timeclock or optional flow meter
- Positive Motor-Driven Regeneration Valve — Motor driven piston is reliable under severe water conditions, resists dirt, iron, turbidity

- Corrosion Resistant Tanks — Made from fiberglass reinforced polyester
- Under-drain design enhances softening capacity and reduces pressure loss
- Retrofit Existing Systems — Our retrofit kits can be used to add full Culligan Smart Controller capabilities to existing systems
- NSF 61 Rating

## Optional Features & Accessories

- Dubl-Safe™ Brine System — Positive overflow protection. Automatic refill control is backed up by shutoff float valve to reduce chance of overflow
- Patented Progressive Flow — Culligan's Smart Controller can monitor flow demands bringing additional softening tanks on-line or offline as flows increase or decrease
- Flow Measuring Devices — are available for direct connection to the Culligan Smart Controller for volume based regeneration initiation
- Brine Reclaim — reduces operating costs
- Remote Display
- RS232, RS485, Modbus PLC Output

## Hi-Flo 3e Water Softener System

Model	Resin Qty. (ft <sup>3</sup> /L)	Pipe Size (in/mm)	Flow Rates (gpm/lpm)		Tank Size*** (in/mm)	
			Continuous*	Peak**	Softener	Brine****
HCE-120-2	4	2	45	60	16 x 65	24 x 50
	113	50.8	170.3	227.1	406 x 1,651	610 x 1,270
HCE-150-2	5	2	60	78	18 x 65	24 x 50
	142	50.8	227.1	295.2	457 x 1,651	610 x 1,270
HCE-210-2	7	2	58	76	21 x 62	24 x 50
	198	50.8	219.5	287.7	533 x 1,575	610 x 1,270
HCE-300-2	10	2	65	85	24 x 72	30 x 50
	283	50.8	246	321.7	610 x 1,829	762 x 1,270
HCE-450-2	15	2	75	100	30 x 72	30 x 50
	425	50.8	283.9	378.5	762 x 1,829	762 x 1,270
HCE-450-3	15	3	160	210	30 x 72	30 x 50
	424.8	76.2	36.32	47.67	762 x 1,829	762 x 1,270
HCE-600-3	20	3	185	250	36 x 72	39 x 48
	566.4	76.2	42	56.75	914 x 1,829	991 x 1,219
HCE-900-3	30	3	200	270	42 x 72	42 x 48
	849.6	76.2	45.4	61.29	1,067 x 1,829	1,067 x 1,219
HCE-1200-3	40	3	215	280	48 x 72	48 x 60
	1132.8	76.2	48.81	63.56	1,219 x 1,829	1,219 x 1,524

\*Flow rate at a 15 psi pressure loss.

\*\*Flow rate at a 25 psi pressure loss.

\*\*\*Dimensions are diameter by tank height.

\*\*\*\*Brine systems are optional. Size shown is size most commonly selected.

Flow rates shown are per tank. Low flow channeling (flow rates less than 0.5 gallons per minute per cubic foot of resin) may cause hardness leakage into effluent.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

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**EXAMPLES OF MARKETS SERVED:**

- CLINICS
- EDUCATIONAL FACILITIES
- ENERGY & POWER
- FOOD & BEVERAGE PRODUCTION
- FOOD SERVICE/RESTAURANTS
- GROCERY
- HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL
- HOSPITALITY/LODGING
- MANUFACTURING
- MUNICIPAL DRINKING WATER
- OIL & GAS

**Durable, Efficient & Expandable  
 Water Treatment for Commercial &  
 Industrial Applications**

The Hi-Flo xN Series softener reduces hard water contaminants\* reducing scale build-up that can affect equipment performance. The corrosion resistant innovative valve design offers improved reliability and ease of service. The Culligan Smart Controller allows you to efficiently set up and manage your water treatment equipment. Customers can set up a single or multiple tank system that adjusts to flow demand. Customers can also monitor their water treatment system performance, consumable usage, and maintenance needs, at a single site or across multiple ones 24 hours a day.

The Hi-Flo xN softener is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to learn more about the Hi-Flo xN softener system.

\*contaminants are not necessarily in your water.

**Culligan Matrix Solutions Advantages:**

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



**Pre-Treatment  
 Solutions**



Membrane  
 Solutions



Deionization  
 Solutions



Storage  
 Solutions



Distribution  
 Solutions

## Warranty

Culligan's Hi-Flo xN water softeners are backed by a limited 1-year warranty against defects in material, workmanship and corrosion. In addition, softener tanks are warranted for a period of 5 years.†

† See printed warranty for details. Culligan will provide a copy of the warranty upon request. Some localities have corrosive water. A softener cannot correct this condition, so its printed warranty disclaims liability for corrosion of plumbing lines, fixtures, or water-using equipment. If you suspect corrosion, your independently operated Culligan dealer has equipment to help control the problem.

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	30–100 psig	210–690 kPa
Power Voltage Frequency	120 Volts <sup>1</sup> 50/60Hz	
Feed Water Temperature	40–120° F	4–49° C
Vacuum	None <sup>2</sup>	None <sup>2</sup>
Turbidity Chlorine Iron	5 NTU, max. <sup>3</sup> 1 mg/L, max. <sup>3</sup> 5 mg/L, max. <sup>3</sup>	

<sup>1</sup> 120 Volt/24 Volt CUL/UL listed Transformer Included.

<sup>2</sup> FRP tank warranty is void if subject to vacuum

<sup>3</sup> See media specification for details.

## Hi-Flo xN Water Softener System

Model	Media Qty.	Pipe Size	Service Flow Rates		Tank Size***		
			Continuous*	Peak**	Softener FRP <sup>a</sup>	Softener Steel <sup>b</sup>	Brine****
			gpm @ psi drop lpm @ kPa drop	gpm @ psi drop lpm @ kPa drop	in mm	in mm	in mm
Hi-Flo xN 150-2	5	2	74	108	21 x 72	20 x 54	24 x 50
	142	50.8	280	409	533 x 1829	508 x 1372	607 x 1270
Hi-Flo xN 210-2	7	2	84	119	24 x 78	24 x 54	24 x 50
	198	50.8	318	450	607 x 1981	607 x 1372	607 x 1270
Hi-Flo xN 300-2	10	2	93	129	30 x 76	30 x 60	30 x 50
	283	50.8	352	488	762 x 1930	762 x 1524	762 x 1270
Hi-Flo xN 450-2	15	2	88	122	30 x 76	30 x 60	30 x 50
	425	50.8	333	462	762 x 1930	762 x 1524	762 x 1270
Hi-Flo xN 600-2	20	2	104	144	36 x 76	36 x 60	39 x 48
	566	50.8	394	545	914 x 1930	914 x 1524	991 x 1219
Hi-Flo xN 750-2	25	2	108	148	42 x 83	42 x 60	42 x 48
	708	50.8	409	560	1067 x 2108	1067 x 1524	1067 x 1219
Hi-Flo xN 900-2	30	2	107	146	42 x 83	42 x 60	42 x 48
	850	50.8	405	553	1067 x 2108	1067 x 1524	1067 x 1219

\*Flow rate is @ 15 psi pressure drop

\*\*Flow rate is @ 25 psi pressure drop

\*\*\*Dimensions are diameter by height

\*\*\*\*Brine Systems are optional

<sup>a</sup> FRP Tank height is measured flange to flange

<sup>b</sup> Steel Tank height is shell height

## Examples of Softener Applications

- Food and Beverage—Improved taste
- Educational Facilities—Boiler and cooling tower make-up water for scale reduction and improved energy costs
- Restaurants—For dishwashing, cleaning material savings, scale reduction
- RO Softener/DI Pretreatment
- Car washes—Quality results, detergent and water heating savings, scale reduction
- Apartment buildings, assisted living facilities and hotels—Quality water for laundry, dishwashers, boilers
- Grocery/Retail—Quality water for aesthetics and help extend equipment life

- Light industry—For process and make-up water, boiler and cooling system pretreatment, general housekeeping
- Office buildings—For heating plant pretreatment, tenant convenience, general housekeeping

## Standard Features

- Single, Multiple Tank Configurations—Hardness removal capacities up to 900,000 grains per tank Continuous flow rates up to 201 gpm per tank
- Culligan's Smart Controller—More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls A variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Telemetric Capability
- Regeneration initiation by choice or combination of time clock, meter or Aqua-Sensor inputs
- Culligan Exclusive Hi-Flo xN Valve - All plastic "corrosion resistant" valve designed for reliability, ease of service with fewer parts compared to that of traditional valve nest.
- DC Motor Driven Piston - The motor driven piston does not require pilot valve when compared to a traditional valve nest. Self cleaning piston movement is ideal for challenging water conditions.

- Plastic Valve Sleeves - The valve sleeves provide a smooth sealing surface and guides the piston travel. The sleeves are designed to minimize wear on the O-ring and for ease of service
- Internal blocking Valves Functionality - Eliminates the need for external blocking valves for multi-tank systems
- Available with FRP or ASME Code Steel Tanks

## Optional Features & Accessories

- Corrosion resistant brine system construction for long life
- Skid Mounted—fully pre-piped and wired systems for single point field utility connection of inlet, outlet, drain and power supply
- Patented Progressive Flow—Culligan's Smart Controller can monitor flow demands bringing additional softening tanks on-line or offline as flows increase or decrease
- Brine Reclaim—reduces operating costs
- Patented Aqua-Sensor® Control—initiates regeneration only when needed based upon water hardness, automatically adjusts to changes in raw water hardness and water consumption
- Flow Measuring Devices— are available for direct connection to the Culligan Smart Controller for volume based regeneration initiation

- Remote Display
- RS232, RS485, Modbus PLC Output

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

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# The Culligan Side Mount (CSM™) Series Heavy-Duty Water Softener System



## EXAMPLES OF MARKETS SERVED:

CLINICS  
EDUCATIONAL FACILITIES  
ENERGY & POWER  
FOOD & BEVERAGE PRODUCTION  
FOOD SERVICE/RESTAURANTS  
GROCERY  
HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL  
HOSPITALITY/LODGING  
MANUFACTURING  
MUNICIPAL DRINKING WATER  
OIL & GAS

## Efficient and Scalable Heavy-Duty Water Treatment System

Use Culligan equipment to help meet the highest standard of water quality at your facility. The Culligan Side Mount heavy-duty softener reduces hard water contaminants\*, even for large flow volume applications, reducing scale buildup that can affect equipment performance. The Culligan-exclusive Smart Controller allows you to efficiently set up and manage your water treatment. Using optional accessories, monitor water usage data, such as the flow rate and volume, and regenerate the system as needed, saving resources and money.

The CSM softener is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to learn more about the CSM softener system.

\*contaminants are not necessarily in your water.

## Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



**Pre-Treatment  
Solutions**



**Membrane  
Solutions**



**Deionization  
Solutions**



**Storage  
Solutions**



**Distribution  
Solutions**

## Warranty

Culligan's CSM water softeners are backed by a limited 1-year warranty against defects in material, workmanship and corrosion. In addition, softener tanks are warranted for a period of 5 years.†

† See printed warranty for details. Culligan will provide a copy of the warranty upon request. Some localities have corrosive water. A softener cannot correct this condition, so its printed warranty disclaims liability for corrosion of plumbing lines, fixtures, or water-using equipment. If you suspect corrosion, your independently operated Culligan dealer has equipment to help control the problem.

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	30–100 psig	210–690 kPa
Power Voltage Frequency Phase	120 Volts 50/60Hz	
Feed Water Temperature	40–120° F	4–49° C
Turbidity Chlorine Iron	5 NTU, max. <sup>2</sup> 1 mg/L, max. <sup>2</sup> 5 mg/L, max. <sup>2</sup>	

<sup>1</sup> 120 Volt/24 Volt CUL/UL listed Transformer Included.  
<sup>2</sup> See media specification for details.

## CSM Water Softener System

Model	Resin Qty. (ft <sup>3</sup> /L)	Pipe Size (in/mm)	Flow Rates (gpm/lpm)		Tank Size*** (in/mm)	
			Continuous*	Peak**	Softener	Brine****
150-2	5	2	67	94	20 x 54	24 x 50
	142	50.8	253.6	355.8	508 x 1,372	610 x 1,270
210-2	7	2	76	102	24 x 54	24 x 50
	198	50.8	287.7	386.1	610 x 1,372	610 x 1,270
300-2	10	2	84	112	30 x 60	30 x 50
	283	50.8	317.9	423.9	762 x 1,524	762 x 1,270
300-3	10	3	152	210	30 x 60	30 x 50
	283	76.2	575.3	794.9	762 x 1,524	762 x 1,270
450-2	15	2	79	106	30 x 60	30 x 50
	425	50.8	299	401.2	762 x 1,524	762 x 1,270
450-3	15	3	135	192	30 x 60	30 x 50
	425	76.2	511	726.7	762 x 1,524	762 x 1,270
600-2	20	2	94	125	36 x 60	39 x 48
	566	50.8	355.8	473.1	914 x 1,524	991 x 1,219
600-3	20	3	183	252	36 x 60	39 x 48
	566	76.2	692.7	953.8	914 x 1,524	991 x 1,219
750-2	25	2	97	129	42 x 60	42 x 48
	708	50.8	367.1	488.3	1,067 x 1,524	1,067 x 1,219
750-3	25	3	201	267	42 x 60	42 x 48
	708	76.2	760.8	1010.6	1,067 x 1,524	1,067 x 1,219
900-2	30	2	96	127	42 x 60	42 x 48
	850	50.8	363.4	480.7	1,067 x 1,524	1,067 x 1,219
900-3	30	3	193	259	42 x 60	42 x 48
	850	76.2	730.5	980.3	1,067 x 1,524	1,067 x 1,219

\*Flow rate at a 15 psi pressure loss.  
\*\*Flow rate at a 25 psi pressure loss.  
\*\*\*Dimensions are diameter by tank height.  
\*\*\*\*Brine systems are optional.  
Flow rates shown are per tank.  
Low flow channeling (flow rates less than 0.5 gallons per minute per cubic foot of resin) may cause hardness leakage into effluent.  
CSM product formerly sold under the Bruner label.

## Examples of Softener Applications

- Food and Beverage—Improved taste  
Educational Facilities—Boiler and cooling tower make-up water for scale reduction and improved energy costs
- Restaurants—For dishwashing, cleaning material savings, scale reduction
- RO Softener/DI Pretreatment
- Car washes—Quality results, detergent and water heating savings, scale reduction
- Apartment buildings, assisted living facilities and hotels—Quality water for laundry, dishwashers, boilers
- Grocery/Retail—Quality water for aesthetics and help extend equipment life

- Light industry—For process and make-up water, boiler and cooling system pretreatment, general housekeeping
- Office buildings—For heating plant pretreatment, tenant convenience, general housekeeping

## Standard Features

- Single, Multiple Tank Configurations — Hardness removal capacities up to 900,000 grains per tank Continuous flow rates up to 201 gpm per tank
- Culligan's Smart Controller — More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls A variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Telemetric Capability
- Regeneration initiation by choice or combination of time clock, meter or Aqua-Sensor inputs
- Culligan's Multiport Valve — Guided perimeter designed diaphragm valves are smooth operating and free of water hammer All valve parts are easily accessible in the design for ease of service

- Corrosion resistant tanks — Made of low carbon steel with epoxy interior lining and finish coat painted exterior

## Optional Features & Accessories

- Corrosion resistant brine system construction for long life
- Skid Mounted — fully pre-piped and wired systems for single point field utility connection of inlet, outlet, drain and power supply
- Patented Progressive Flow — Culligan's Smart Controller can monitor flow demands bringing additional softening tanks on-line or offline as flows increase or decrease
- ASME Code Tanks
- Brine Reclaim — reduces operating costs
- Patented Aqua-Sensor® Control — initiates regeneration only when needed based upon water hardness, automatically adjusts to changes in raw water hardness and water consumption
- Flow Measuring Devices — are available for direct connection to the Culligan Smart Controller for volume based regeneration initiation
- Remote Display
- RS232, RS485, Modbus PLC Output

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



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# The Culligan Hi-Flo® 50 Series Industrial Water Softener System



## EXAMPLES OF MARKETS SERVED:

- CLINICS
- EDUCATIONAL FACILITIES
- ENERGY & POWER
- FOOD & BEVERAGE PRODUCTION
- FOOD SERVICE/RESTAURANTS
- GROCERY
- HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL
- HOSPITALITY/LODGING
- MANUFACTURING
- MUNICIPAL DRINKING WATER
- OIL & GAS

## Durable High-Volume Water Softening for Industrial Applications

The Culligan Hi-Flo 50 water softener delivers high-quality water for high-volume applications, reducing contaminants\* that affect the efficiency and performance of water-using equipment. The scalable large-capacity softener helps meet your present and future water softening requirements. The Culligan exclusive Smart Controller allows you to efficiently set up and manage your water treatment. Use optional accessories to manage your softening needs including flow rates, and water quality, saving resources and money.

The Hi-Flo 50 softener is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to learn more about the Hi-Flo 50 softener system.

\*contaminants may not necessarily be in your water

## Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



**Pre-Treatment Solutions**



Membrane Solutions



Deionization Solutions



Storage Solutions



Distribution Solutions

## Warranty

Culligan's Hi-Flo 50 water softeners are backed by a limited 1-year warranty against defects in material, workmanship and corrosion. In addition, softener tanks are warranted for a period of 5 years.†

†See printed warranty for details. Culligan will provide a copy of the warranty upon request.

Some localities have corrosive water. A softener cannot correct this condition, so its printed warranty disclaims liability for corrosion of plumbing lines, fixtures, or water-using equipment. If you suspect corrosion, your independently operated Culligan dealer has equipment to help control the problem.

## Examples of Softener Applications

- Boiler and Cooling tower make-up water – reduce scale and lower energy costs
- RO/DI pre-treatment
- Ultra soft water for oil field steam injectors – increase thermal efficiency and reduce maintenance costs
- Manufacturing – water treatment for consistent production
- Food Manufacturing ingredient, process and utility water treatment
- Process water treatment

## Standard Features

- Single or Multiple Tank Configurations – Hardness removal capacities up to 2,000,000 grains per tank. Continuous flow rates up to 240 gpm per tank
- Culligan's Smart Controller – More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls, a variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Regeneration initiation by choice or combination of time clock, meter or Aqua-Sensor® inputs
- Telemetric Capability
- Side-Mounted Valve Harness – Guided perimeter designed diaphragm valves are smooth operating and free of water hammer, all valve parts are easily accessible in the design for ease of service
- Corrosion resistant tanks – Made of low carbon steel with epoxy interior lining and finish coat painted exterior

## Optional Features & Accessories

- Corrosion resistant brine system construction for long life
- Skid Mounted – fully pre-piped and wired systems for single point field utility connection of inlet, outlet, drain and power supply
- Patented Progressive Flow – Culligan's Smart Controller can monitor flow demands bringing additional softening tanks on-line or offline as flows increase or decrease
- ASME Code Tanks
- Brine Reclaim – reduces operating costs by recycling a portion of the regeneration water
- Patented Aqua-Sensor® – initiates regeneration only when needed based upon water hardness, automatically adjusts to changes in raw water hardness and water consumption
- Flow Measuring Devices – are available for volume based regeneration initiation
- Gauge Packages – pressure gauges provided for mounting at the inlet and outlet connection
- Remote Display
- RS232, RS485, Modbus PLC Output

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	30-120 psig	210-830 kPa
Power Voltage Frequency Phase	120 VAC/24 VAC <sup>1</sup> 50/60Hz	
Feed Water Temperature	40–120° F	4-49° C
Turbidity, maximum	5 NTU	
Chlorine, max.: 0 mg/L	1 mg/l	
Iron, maximum	5 mg/l	

<sup>1</sup>120 Volt/24 Volt CUL/UL listed Transformer Included.  
<sup>2</sup>See media specification for details.

## Hi-Flo 50 Water Softener System

Model	Resin Qty. (Ft <sup>3</sup> /L)	Pipe Size (in/mm)	Flow Rates (gpm @ psi / lpm @ kPa)		Tank Size (in/mm)	
			Continuous*	Peak**	Resin Tank	Brine Tank***
HS-1203	40	3	150 @ 8	230 @ 15	48 x 60	48 x 60
	1133	76.2	567.8 @ 55.2	870.6 @ 103.4	1,219 x 1,524	1,219 x 1,524
HS-1503	50	3	160 @ 7	230 @ 14	54 x 60	48 x 60
	1416	76.2	605.6 @ 48.3	870.6 @ 96.5	1,372 x 1,524	1,219 x 1,524
HS-1504	50	4	190 @ 6	320 @ 15	54 x 60	48 x 60
	1416	101.6	719.2 @ 41.4	1211.2 @ 103.4	1,372 x 1,524	1,219 x 1,524
HS-2004	67	4	240 @ 7	400 @ 18	60 x 60	60 x 60
	1897	101.6	908.4 @ 48.3	1514 @ 124.1	1,524 x 1,524	1,524 x 1,524

\* Flow rate is based on pressure drop.  
\*\* Flow rate is based on pressure drop.  
\*\*\* Dimensions are diameter by tank height.  
\*\*\*\* Per Softener Tank.

Flow rates shown are per tank.  
Low flow channeling (flow rates less than 0.5 gallons per minute per cubic foot of resin) may cause hardness leakage into effluent.

# Finally, an end-to-end solution from a single source.



## Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



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# Pre-Treatment Products Filters



Pre-Treatment  
Solutions



Membrane  
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Deionization  
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Storage  
Solutions



Distribution  
Solutions

Model	HE 1.5	Hi-Flo 42	Hi-Flo xN Series	CSM	Hi-Flo 50
					
Depth Filter Flow Rate (per tank)	8 - 36 GPM	24 - 107 GPM	22 - 145 GPM	22 - 145 GPM	126 - 295 GPM
Carbon Filter Flow Rate (per tank) - Organics Removal	4 - 12 GPM	12 - 35 GPM	16 - 48 GPM	16 - 48 GPM	63 - 98 GPM
Carbon Filter Flow Rate (per tank) - Chlorine Removal	8 - 24 GPM	24 - 71 GPM	31 - 96 GPM	31 - 96 GPM	126 - 196 GPM
Pipe Size	1.5"	2"	2"	2" & 3"	3" & 4"
Features					
Valve Type	Top Mount	Top Mount	Side Mount Valve Nest	Side Mount Multi-Port Diaphragm	Side Mount Valve Nest
Valve Body Material	Plastic	Brass	Plastic	Cast Iron	Galvanized Steel Valve Harness
Tank Type	Fiberglass	Fiberglass	Fiberglass / ASME Steel	Steel / ASME Steel	Steel / ASME Steel
Control	Culligan Smart Controller (GBE)	Culligan Smart Controller (GBE)	Culligan Smart Controller (GBE)	Culligan Smart Controller (GBE)	Culligan Smart Controller (GBE)
Regeneration Initiation					
Time-clock	√	√	√	√	√
Meter	√	√	√	√	√
Alternating	√	√	√	√	√
Duplex	√	√	√	√	√
Parallel	√	√	√	√	√
Progressive Flow	√	√	√	√	√
Local Wireless Remote Monitor	√	√	√	√	√
Central Remote Monitoring (Telemetry)	√	√	√	√	√



**EXAMPLES OF MARKETS SERVED:**

- CLINICS
- EDUCATIONAL FACILITIES
- ENERGY & POWER
- FOOD & BEVERAGE PRODUCTION
- FOOD SERVICE/ RESTAURANTS
- GROCERY
- HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL
- HOSPITALITY/LODGING
- MANUFACTURING
- MUNICIPAL DRINKING WATER
- OIL & GAS

**High-Quality Filtered Water**  
**At Your Fingertips**

The High Efficiency (HE) filter with patented technology delivers improved efficiency by reducing contaminants\* that affect equipment performance and durability. With the Culligan Smart Controller, available on the HE, customers can set-up a single or multiple tank system that adjusts to flow demand. Customers can also monitor their water treatment system performance, consumable usage, and maintenance needs, at a single site or across multiple ones 24 hours a day.

The HE 1.5 filter is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to learn more about the HE filter system.

\*contaminants are not necessarily in your water.

**Culligan Matrix Solutions Advantages:**

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



**Pre-Treatment**  
**Solutions**



Membrane  
 Solutions



Deionization  
 Solutions



Storage  
 Solutions



Distribution  
 Solutions

## Warranty

Culligan's HE filters are backed by a limited 1-year warranty against defects in materials, workmanship, and corrosion. The plastic conditioner tank has a 5-year warranty. See printed warranty for details.†

†See printed warranty for details. Culligan will provide a copy of the warranty upon request.

## Examples of Filter Applications

- Food and Beverage — Improved taste and increased cost savings
- Drinking Water — Reduces turbidity and chlorine; improves taste and clarity
- Boilers — Turbidity reduction, reduce sludge buildup
- Light Industry Processes — Reduces particulate matter
- Grocery/Retail — Quality water for aesthetics and help extend equipment life
- Pretreatment — For softeners, RO's and DI systems
- Vehicle Wash — Turbidity reduction

## Standard Features

- Single or Multiple Tank Configurations
- Culligan's Smart Controller — More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls, a variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Telemetric Capability
- Regeneration initiation by choice or combination of time clock, flow meter or differential pressure switch
- Carbon Filters — For reduction of organics (flow rates up to 12 gpm per tank), or chlorine (flow rates up to 24 gpm per tank)
- Depth Filters — Flow rates up to 36 gpm per tank
- Corrosion Resistant Positive Motor-Driven Regeneration Valve — Motor driven piston resists dirt, iron and turbidity
- Corrosion Resistant Tanks — Made from fiberglass reinforced polyester
- Under-drain design reduces pressure loss
- Flow meter
- Electronic By-Pass - The filter can be by-passed electronically either from the unit or from the remote monitor and automatically goes back into service after a pre-set time.
- Multi-Poppet Design — Allows for easy service and increases durability and valve life
- UL/CUL Ratings

## Optional Features & Accessories

- Patented Progressive Flow — Culligan's Smart Controller can monitor flow demands bringing additional tanks on-line or offline as flows increase or decrease
- Pressure Differential Switch
- Bypass valve
- Remote Display
- RS232, RS485, Modbus PLC Output
- Skid Mounted Systems

## System Specifications

Specification	US	Metric
Pipe Size, All Units	1.5"	
Maximum Operating Pressure	20–125 psig	135–860 kPa
Power Voltage Frequency	24 50/60 Hz <sup>1</sup>	
Feed Water Temperature	33–120° F	0–48° C
Power Consumption	22 Watts	
Vacuum	None <sup>2</sup>	

<sup>1</sup> 120 Volt/24 Volt CUL/UL listed Transformer Included.  
<sup>2</sup> Tank warranty is void if subject to vacuum.

## HE Water Filter System

Model	Depth Filters					
	Service Flow Rates <sup>1</sup>		Backwash Flow <sup>2</sup> (gpm/lpm)	Pipe Size (in./mm)	Media Qty. (lbs./kg)	Filter Tank Size (in./mm)
	Normal gpm @ psi drop lpm @ kPa drop	Peak gpm @ psi drop lpm @ kPa drop				
HE DF-12	8 @ 3 30.3 @ 20.7	12 @ 5 45.4 @ 34.5	10 37.9	1.5 38.1	180 82	12 x 52 305 x 1,321
HE DF-14	11 @ 3 41.6 @ 20.7	16 @ 6 60.6 @ 41.4	15 56.8	1.5 38.1	208 94	14 x 47 356 x 1,194
HE DF-16	14 @ 4 53.0 @ 27.6	21 @ 6 79.5 @ 41.4	20 75.7	1.5 38.1	280 127	16 x 53 406 x 1,346
HE DF-21	24 @ 8 90.8 @ 55.2	36 @ 13 136.3 @ 89.6	30 113.6	1.5 38.1	615 279	21 x 62 533 x 1,575

<sup>1</sup> Service flow rates are based on:  
Normal (10 gpm/ft<sup>2</sup> - 24 m<sup>2</sup>/hr/m<sup>2</sup>) - Best quality effluent at specified flow. Lowest pressure loss. Recommended for suspended solids loads up to and greater than 300 ppm.  
Peak (15 gpm/ft<sup>2</sup> - 37 m<sup>2</sup>/hr/m<sup>2</sup>) - Very good quality effluent at specified flow. Increased pressure loss. Recommended for suspended solids loads < 300 ppm.  
<sup>2</sup> Backwash flow rates are based on 12-14 gpm/ft<sup>2</sup> (29-34 m<sup>2</sup>/hr/m<sup>2</sup>) using 50° F (10° C) water. A different backwash rate may be required depending upon water temperature.  
NOTE: Operational, maintenance and replacement requirements are essential for this product to perform as advertised. Specifications shown are for single models. Also available in multiple tank configurations.

Model	Carbon Filters					
	Service Flow Rates		Backwash Flow <sup>3</sup> (gpm/lpm)	Pipe Size (in./mm)	Media Qty. (ft <sup>3</sup> /m <sup>3</sup> )	Filter Tank Size (in./mm)
	Taste Odor & Organic Removal <sup>1</sup> gpm @ psi drop lpm @ kPa drop	Dechlorination <sup>2</sup> gpm @ psi drop lpm @ kPa drop				
HE CF-12	4 @ 1 15.1 @ 6.9	8 @ 1 30.3 @ 6.9	8 30.3	1.5 38.1	2 0.057	12 x 52 305 x 1,321
HE CF-14	5 @ 1 18.9 @ 6.9	11 @ 2 41.6 @ 13.8	10 37.9	1.5 38.1	3 0.085	14 x 47 356 x 1,194
HE CF-16	7 @ 1 26.5 @ 6.9	14 @ 2 53.0 @ 13.8	15 56.8	1.5 38.1	3 0.085	16 x 53 406 x 1,346
HE CF-21	12 @ 2 45.4 @ 13.8	24 @ 8 90.8 @ 55.2	25 94.6	1.5 38.1	6 0.170	21 x 62 533 x 1,575

<sup>1</sup> Service flow rates for taste, odor & organic removal are based on 5 gpm/ft<sup>2</sup> (12 m<sup>2</sup>/hr/m<sup>2</sup>).  
<sup>2</sup> Service flow rates for dechlorination are based on 10 gpm/ft<sup>2</sup> (24 m<sup>2</sup>/hr/m<sup>2</sup>).  
<sup>3</sup> Backwash flow rates are based on 10 gpm/ft<sup>2</sup> (24 m<sup>2</sup>/hr/m<sup>2</sup>) using 50° F (10° C) water. A different backwash rate may be required depending upon water temperature or the type of carbon used.  
NOTE: Operational, maintenance and replacement requirements are essential for this product to perform as advertised. Specifications shown are for single models. Also available in multiple tank configurations.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

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## The Culligan Hi-Flo<sup>®</sup> 42 Series Water Filter System



### EXAMPLES OF MARKETS SERVED:

CLINICS  
EDUCATIONAL FACILITIES  
ENERGY & POWER  
FOOD & BEVERAGE PRODUCTION  
FOOD SERVICE/RESTAURANTS  
GROCERY  
HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL  
HOSPITALITY/LODGING  
MANUFACTURING  
MUNICIPAL DRINKING WATER  
OIL & GAS

### Efficient Water Filtration Management

Expect high quality water when your water treatment system includes the Culligan Hi-Flo 42 filter. The Hi-Flo 42 helps meet the challenges of your changing water quality needs at variable consumption levels, reducing solids and contaminants\* that affect water-using equipment performance and durability. Using the Culligan-exclusive Smart Controller you can efficiently manage your water quality.

The Hi-Flo 42 filter is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to learn more about the Hi-Flo 42 filter system.

\*contaminants may not necessarily be in your water

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



**Pre-Treatment  
Solutions**



**Membrane  
Solutions**



**Deionization  
Solutions**



**Storage  
Solutions**



**Distribution  
Solutions**

## Warranty

Culligan's Hi-Flo 42 water filters are backed by a limited 1-year warranty against defects in material, workmanship and corrosion. In addition, tanks carry a limited 5-year warranty.†

†See printed warranty for details. Culligan will provide a copy of the warranty upon request.

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	40–100 psig	207–690 kPa
Power Voltage Frequency Phase	120 VAC/24 VAC <sup>1</sup> 50/60Hz	
Feed Water Temperature	40–120° F	4–49° C
Power Consumption	3/100 Watts	
Vacuum	None <sup>2</sup>	

1 120 Volt/24 Volt CUL/UL listed Transformer Included.  
2 Tank warranty is void if subject to vacuum.

## Examples of Filter Applications

- Food and Beverage—Improved taste and increased cost savings
- Drinking Water—Reduces turbidity and chlorine; improves taste and clarity
- Boilers—Turbidity reduction, reduce sludge blowdown
- Light Industry Processes—Reduces particulate matter
- Pretreatment—For softeners, RO's and DI systems
- Vehicle Wash—Turbidity reduction
- Grocery/Retail—Quality water for aesthetics and help extend equipment life

## Standard Features

- Single or Multiple Tank Configurations
- Culligan's Smart Controller — More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls, a variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Telemetric Capability
- Regeneration initiation by choice or combination of time clock, meter or differential pressure switch
- Carbon Filters — For reduction of organics (flow rates up to 35 gpm per tank), or chlorine (flow rates up to 71 gpm per tank)
- Depth Filters — Flow rates up to 107 gpm per tank
- Top-Mounted Control Valve — Keeps plumbing connections simple and adaptable, full flow porting with rounded orifices and wide-open cartridges promote good flow characteristics and low pressure fluctuations
- Corrosion resistant tanks — Made of fiberglass reinforced polyester (FRP) with additional reinforcement from continuous fiberglass overlap

## Optional Features & Accessories

- Patented Progressive Flow — Culligan's Smart Controller can monitor flow demands, bringing additional tanks on-line or off-line as flows increase or decrease
- Differential Pressure Switch
- ASME Code Tanks
- Gauge Packages — pressure gauges provided for mounting at the inlet and outlet connection
- Separate source regeneration kits
- Skid Mounted — fully pre-piped and wired systems for single point field utility connection of inlet, outlet, drain and power supply
- Flow Measuring Devices — are available for volume based regeneration initiation
- Remote Display
- RS232, RS485, Modbus PLC Output

## Hi-Flo 42 Water Filter System

Depth Filters						
Model	Service Flow Rates <sup>1</sup>		Backwash Flow <sup>2</sup> (gpm/lpm)	Pipe Size (in./mm)	Media Qty. (lbs/kg)	Filter Tank Size (in./mm)
	Normal	Peak				
	gpm @ psi drop lpm @ kPa drop	gpm @ psi drop lpm @ kPa drop				
HDF-20T	24 @ 5	36 @ 10	30	2	615	21 x 62
	90.8 @ 34.5	136.3 @ 68.9	113.6	50.8	279	533 x 1575
HDF-24T	32 @ 5	48 @ 9	48	2	870	24 x 72
	121.1 @ 34.5	181.7 @ 62	181.7	50.8	395	610 x 1,829
HDF-30T	50 @ 7	74 @ 11	70	2	1230	30 x 72
	189.3 @ 48.3	280.1 @ 76	265	50.8	558	762 x 1,829
HDF-36T	71 @ 10	107 @ 19	90	2	1895	36 x 72
	268.7 @ 68.9	405 @ 131	340.7	50.8	860	914 x 1,829

1 Service flow rates are based on:  
Normal (10 gpm/ft<sup>2</sup> - 24 m<sup>2</sup>/hr/m<sup>2</sup>) - Best quality effluent at specified flow. Lowest pressure loss. Recommended for suspended solids loads up to and greater than 300 ppm.  
Peak (15 gpm/ft<sup>2</sup> - 37 m<sup>2</sup>/hr/m<sup>2</sup>) - Very good quality effluent at specified flow. Increased pressure loss. Recommended for suspended solids loads < 300 ppm.  
2 Backwash flow rates are based on 12-14 gpm/ft<sup>2</sup> (29-34 m<sup>2</sup>/hr/m<sup>2</sup>) using 50° F (10° C) water. A different backwash rate may be required depending upon water temperature.

Carbon Filters						
Model	Service Flow Rates		Backwash Flow <sup>3</sup> (gpm/lpm)	Pipe Size (in./mm)	Media Qty. (ft <sup>3</sup> /m <sup>3</sup> )	Filter Tank Size (in./mm)
	Taste Odor & Organic Removal <sup>1</sup>	Dechlorination <sup>2</sup>				
	gpm @ psi drop lpm @ kPa drop	gpm @ psi drop lpm @ kPa drop				
HRF-20T	12 @ 1.5	24 @ 4	20	2	6	21 x 62
	45.4 @ 10.3	90.8 @ 27.6	75.7	50.8	0.17	522 x 1575
HRF-24T	16 @ 2	31 @ 4	30	2	8	24 x 72
	60.6 @ 13.8	117.3 @ 27.6	113.6	50.8	0.227	610 x 1,829
HRF-30T	25 @ 3	49 @ 6	48	2	12	30 x 72
	94.6 @ 20.7	185.5 @ 41.4	181.7	50.8	0.34	762 x 1,829
HRF-36T	35 @ 3	71 @ 9	70	2	18	36 x 72
	132.5 @ 20.7	268.7 @ 62	265	50.8	0.51	914 x 1,829

1 Service flow rates for taste, odor & organic removal are based on 5 gpm/ft<sup>2</sup> (12 m<sup>2</sup>/hr/m<sup>2</sup>).  
2 Service flow rates for dechlorination are based on 10 gpm/ft<sup>2</sup> (24 m<sup>2</sup>/hr/m<sup>2</sup>).  
3 Backwash flow rates are based on 10 gpm/ft<sup>2</sup> (24 m<sup>2</sup>/hr/m<sup>2</sup>) using 50° F (10° C) water. A different backwash rate may be required depending upon water temperature or the type of carbon used.  
NOTE: Operational, maintenance and replacement requirements are essential for this product to perform as advertised. Specifications shown are for single models. Also available in multiple tank configurations.  
All pressure drop figures are based on new filter media and a water temperature of 60° F.  
Depth filters are capable of 10 micron effluent water quality, whereas all other filter types are capable of 40 micron effluent water quality.

# Finally, an end-to-end solution from a single source.



## Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



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**EXAMPLES OF MARKETS SERVED:**

- CLINICS
- EDUCATIONAL FACILITIES
- ENERGY & POWER
- FOOD & BEVERAGE PRODUCTION
- FOOD SERVICE/RESTAURANTS
- GROCERY
- HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL
- HOSPITALITY/LODGING
- MANUFACTURING
- MUNICIPAL DRINKING WATER
- OIL & GAS

**Durable & Efficient Commercial & Industrial Water Filtration**

The Hi-Flo xN Series filter reduces contaminants\* and solids that affect water quality and equipment efficiency. The corrosion resistant innovative valve design offers improved reliability and ease of service. The Culligan Smart Controller allows you to efficiently set up and manage your water treatment equipment. Customers can set up a single or multiple tank system that adjusts to flow demand. Customers can also monitor their water treatment system performance, consumable usage, and maintenance needs, at a single site or across multiple ones 24 hours a day.

The Hi-Flo xN filter is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to learn more about the Hi-Flo xN softener system.

\*contaminants are not necessarily in your water.

**Culligan Matrix Solutions Advantages:**

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



**Pre-Treatment  
 Solutions**



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## Warranty

Culligan's Hi-Flo xN water filters are backed by a limited 1-year warranty against defects in material, workmanship and corrosion. In addition, tanks carry a limited 5-year warranty.†

† See printed warranty for details. Culligan will provide a copy of the warranty upon request.

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	30–100 psig	207–690 kPa
Power Voltage Frequency	120 Volts <sup>1</sup> 50/60Hz	
Feed Water Temperature	40–120° F	4–49° C
Vacuum	None <sup>2</sup>	None <sup>2</sup>

<sup>1</sup> 120 Volt / 24 Volt Cal./UL listed transformer included.

<sup>2</sup> FRP Tank warranty is void if subject to vacuum

## Examples of Filter Applications

- Food and Beverage—Improved taste and increased cost savings
- Drinking Water—Reduces turbidity and chlorine; improves taste and clarity
- Boilers—Turbidity reduction, reduce sludge slowdown
- Light Industry Processes—Reduces particulate matter

- Pretreatment—For softeners, RO's and DI systems
- Vehicle Wash—Turbidity reduction
- Grocery/Retail—Quality water for aesthetics and help extend equipment life

## Standard Features

- Single or Multiple Tank Configurations
- Culligan's Smart Controller—More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls, a variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Telemetric Capability

- Regeneration initiation by choice or combination of time clock, flow meter or differential pressure switch
- Carbon Filters—For reduction of organics (flow rates up to 48 gpm per tank), or chlorine (flow rates up to 96 gpm per tank)
- Depth Filters—Flow rates up to 145 gpm per tank
- Culligan Exclusive Hi-Flo xN Valve - All plastic "corrosion resistant" valve designed for reliability, ease of service with fewer parts compared to that of traditional valve nest

- DC Motor Driven Piston - The motor driven piston does not require pilot valve when compared to a traditional valve nest.
- Plastic Valve Sleeves - The valve sleeves provide a smooth sealing surface and guides the piston travel. The sleeves are redesigned to minimize wear on the O-ring and for ease of service conditions
- Internal blocking Valves Functionality - Eliminates the need for external blocking valves for multi-tank systems
- Available with FRP or ASME Code Steel tanks

## Optional Features & Accessories

- Patented Progressive Flow—Culligan's Smart Controller can monitor flow demands, bringing additional tanks on-line or off-line as flows increase or decrease
- Differential Pressure Switch

- Gauge Packages—Pressure gauges provided for mounting at the inlet and outlet connection
- Skid Mounted—Fully pre-piped and wired systems for single point field utility connection of inlet, outlet, drain and power supply

- Flow Measuring Devices—Available for volume based regeneration initiation
- Remote Display
- RS232, RS485, Modbus PLC Output

## Hi-Flo xN Water Filter System

Model	Depth Filters						
	Service Flow Rates <sup>1</sup>		Backwash Flow <sup>2</sup> (gpm/lpm)	Media Qty. (lbs/kg)	Pipe Size (in/mm)	Tank Size <sup>***</sup>	
	Normal gpm @ psi drop lpm @ kPa drop	Peak gpm @ psi drop lpm @ kPa drop				Filter FRP <sup>a</sup>	Filter Steel <sup>b</sup>
					in mm	in mm	
Hi-Flo xN 202D	22 @ 5	33 @ 10	30	565	2	21 x 72	20 x 54
	83 @ 34	125 @ 69	114	256	50.8	533 x 1829	508 x 1372
Hi-Flo xN 242D	32 @ 4	48 @ 8	45	870	2	24 x 78	24 x 54
	121 @ 28	182 @ 55	170	395	50.8	607 x 1981	607 x 1372
Hi-Flo xN 302D	50 @ 7	74 @ 14	75	1280	2	30 x 76	30 x 60
	189 @ 48	280 @ 97	284	581	50.8	762 x 1930	762 x 1524
Hi-Flo xN 362D	71 @ 8	107 @ 19	105	1795	2	36 x 76	36 x 60
	269 @ 55	405 @ 131	397	814	50.8	914 x 1930	914 x 1524
Hi-Flo xN 422D	97 @ 12	145 @ 23	150	2710	2	42 x 83	42 x 60
	367 @ 83	549 @ 159	568	1229	50.8	1067 x 2108	1067 x 1524

\*\*\*Dimensions are diameter by height

<sup>a</sup> FRP Tank height is measured flange to flange

<sup>b</sup> Steel Tank height is shell height

<sup>1</sup> Service flow rates are based on:

Normal (10 gpm/ft<sup>2</sup> - 24 m<sup>2</sup>/hr/m<sup>2</sup>) - Best quality effluent at specified flow. Lowest pressure loss. Recommended for suspended solids loads up to and greater than 300 ppm.

Peak (15 gpm/ft<sup>2</sup> - 37 m<sup>2</sup>/hr/m<sup>2</sup>) - Vary good quality effluent at specified flow. Increased pressure loss. Recommended for suspended solids loads < 300 ppm.

<sup>2</sup> Backwash flow rates are based on 12-14 gpm/ft<sup>2</sup> (29-34 m<sup>2</sup>/hr/m<sup>2</sup>) using 50° F (10° C) water. A different backwash rate may be required depending upon water temperature.

Model	Carbon Filters						
	Service Flow Rates <sup>1</sup>		Backwash Flow <sup>2</sup> (gpm/lpm)	Media Qty. (ft <sup>3</sup> /m <sup>3</sup> )	Pipe Size (in/mm)	Tank Size <sup>***</sup>	
	Taste & Odor Removal lpm @ kPa drop	Dechlorination lpm @ kPa drop				Filter FRP <sup>a</sup>	Filter Steel <sup>b</sup>
					gpm @ psi drop	in mm	
Hi-Flo xN 242R	16 @ 2	31 @ 5	30	8	2	24 x 78	24 x 54
	61 @ 14	117 @ 34	114	0.23	50.8	607 x 1981	607 x 1372
Hi-Flo xN 302R	25 @ 2	49 @ 6	45	12	2	30 x 76	30 x 60
	95 @ 14	185 @ 41	170	0.34	50.8	762 x 1930	762 x 1524
Hi-Flo xN 362R	35 @ 2	71 @ 9	70	18	2	36 x 76	36 x 60
	132 @ 14	269 @ 62	265	0.51	50.8	914 x 1930	914 x 1524
Hi-Flo xN 422R	48 @ 2	96 @ 11	95	24	2	42 x 83	42 x 60
	182 @ 14	363 @ 76	360	0.68	50.8	1067 x 2108	1067 x 1524

\*\*\*Dimensions are diameter by height

<sup>a</sup> FRP Tank height is measured flange to flange

<sup>b</sup> Steel Tank height is shell height

<sup>1</sup> Service flow rates for taste, odor & organic removal are based on 5 gpm/ft<sup>2</sup> (12 m<sup>2</sup>/hr/m<sup>2</sup>). Service flow rates for dechlorination are based on 10 gpm/ft<sup>2</sup> (24 m<sup>2</sup>/hr/m<sup>2</sup>).

<sup>2</sup> Backwash flow rates are based on 10 gpm/ft<sup>2</sup> (24 m<sup>2</sup>/hr/m<sup>2</sup>) using 50° F (10° C) water. A different backwash rate may be required depending upon water temperature or the type of carbon used.

NOTE: Operational, maintenance and replacement requirements are essential for this product to perform as advertised. Specifications shown are for single models. Also available in multiple tank configurations.

All pressure drop figures are based on new filter media and a water temperature of 60° F.

Depth filters are capable of 10 micron effluent water quality, whereas all other filter types are capable of 40 micron effluent water quality.

# Finally, an end-to-end solution from a single source.



## Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



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# The Culligan Side Mount (CSM™) Series Heavy-Duty Water Filter System



## EXAMPLES OF MARKETS SERVED:

CLINICS  
EDUCATIONAL FACILITIES  
ENERGY & POWER  
FOOD & BEVERAGE PRODUCTION  
FOOD SERVICE/RESTAURANTS  
GROCERY  
HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL  
HOSPITALITY/LODGING  
MANUFACTURING  
MUNICIPAL DRINKING WATER  
OIL & GAS

## High-Volume Filtration for Commercial and Industrial Water Systems

When you want to produce high quality water in a demanding and variable environment, trust Culligan filters. The Culligan Side Mount (CSM) heavy-duty filter reduces contaminants\* and solids that affect water quality and equipment efficiency. The Culligan-exclusive Smart Controller makes it easy for you to set up and manage your water treatment. Using optional accessories such as an automatic timer or sensors, monitor the system and filter as needed without constant supervision, saving resources and money.

The CSM heavy-duty commercial filter is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to discuss your water treatment options.

\*contaminants are not necessarily in your water.

## Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



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Distribution  
Solutions

## Warranty

Culligan's CSM water filters are backed by a limited 1-year warranty against defects in material, workmanship and corrosion. In addition, tanks carry a limited 5-year warranty.†

† See printed warranty for details. Culligan will provide a copy of the warranty upon request.

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	30–100 psig	207–690 kPa
Power Voltage Frequency Phase	120 Volts 50/60Hz	
Feed Water Temperature	40–120° F	4–49° C

1 120 Volt/ 24 Volt Cal./UL listed transformer included.

## Examples of Filter Applications

- Food and Beverage—Improved taste and increased cost savings
- Drinking Water—Reduces turbidity and chlorine; improves taste and clarity
- Boilers—Turbidity reduction, reduce sludge slowdown
- Light Industry Processes—Reduces particulate matter

- Pretreatment—For softeners, RO's and DI systems
- Vehicle Wash—Turbidity reduction
- Grocery/Retail—Quality water for aesthetics and help extend equipment life

## Standard Features

- Single or Multiple Tank Configurations
- Culligan's Smart Controller—More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls, a variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Telemetric Capability
- Regeneration initiation by choice or combination of time clock, flow meter or differential pressure switch
- Carbon Filters—For reduction of organics (flow rates up to 48 gpm per tank), or chlorine (flow rates up to 96 gpm per tank)
- Depth Filters—Flow rates up to 145 gpm per tank

- Culligan's Multiport Valve—Guided perimeter designed diaphragm valves are smooth operating and free of water hammer, all valve parts are easily accessible in the design for ease of service
- Corrosion resistant tanks—Made of low carbon steel with epoxy interior lining and finish coat painted exterior

## Optional Features & Accessories

- Patented Progressive Flow—Culligan's Smart Controller can monitor flow demands, bringing additional tanks on-line or off-line as flows increase or decrease
- Differential Pressure Switch
- ASME Code Tanks
- Gauge Packages—Pressure gauges provided for mounting at the inlet and outlet connection
- Separate source regeneration kits
- Skid Mounted—Fully pre-piped and wired systems for single point field utility connection of inlet, outlet, drain and power supply
- Flow Measuring Devices—Available for volume based regeneration initiation
- Remote Display
- RS232, RS485, Modbus PLC Output

## CSM Water Filter System

Model	Depth Filters					
	Service Flow Rates <sup>1</sup>		Backwash Flow <sup>2</sup> (gpm/lpm)	Pipe Size (in./mm)	Media Qty. (lbs./kg)	Filter Tank Size (in./mm)
	Normal gpm @ psi drop lpm @ kPa drop	Peak gpm @ psi drop lpm @ kPa drop				
CSM-202D	22 @ 6	33 @ 12	30	2	571	20 x 54
	83.3 @ 41.4	124.9 @ 13.8	113.6	50.8	259	508 x 1,372
CSM-242D	32 @ 5	48 @ 9	45	2	830	24 x 54
	121.1 @ 34.5	181.7 @ 62	170.3	50.8	376	610 x 1,372
CSM-302D	50 @ 9	74 @ 17	75	2	1244	30 x 60
	189.3 @ 62	280.1 @ 117	283.9	50.8	564	762 x 1,524
CSM-362D	71 @ 11	107 @ 23	105	2	1765	36 x 60
	268.7 @ 6.9	405 @ 159	397.4	50.8	801	914 x 1,524
CSM-422D	97 @ 15	145 @ 28	150	2	2488	42 x 60
	367.1 @ 103.4	548.8 @ 193	567.8	50.8	1129	1,067 x 1,524
CSM-423D	97 @ 6	145 @ 11	150	3	2488	42 x 60
	367.1 @ 41.4	548.8 @ 76	567.8	76.2	1129	1,067 x 1,524

<sup>1</sup> Service flow rates are based on:  
Normal (10 gpm/ft<sup>2</sup> - 24 m<sup>2</sup>/hr/m<sup>2</sup>) - Best quality effluent at specified flow. Lowest pressure loss. Recommended for suspended solids loads up to and greater than 300 ppm.  
Peak (15 gpm/ft<sup>2</sup> - 37 m<sup>2</sup>/hr/m<sup>2</sup>) - Very good quality effluent at specified flow. Increased pressure loss. Recommended for suspended solids loads < 300 ppm.  
<sup>2</sup> Backwash flow rates are based on 12-14 gpm/ft<sup>2</sup> (29-34 m<sup>2</sup>/hr/m<sup>2</sup>) using 50° F (10° C) water. A different backwash rate may be required depending upon water temperature.

Model	Carbon Filters					
	Service Flow Rates		Backwash Flow <sup>3</sup> (gpm/lpm)	Pipe Size (in./mm)	Media Qty. (ft <sup>2</sup> /m <sup>2</sup> )	Filter Tank Size (in./mm)
	Taste Odor & Organic Removal <sup>1</sup> gpm @ psi drop lpm @ kPa drop	Dechlorination <sup>2</sup> gpm @ psi drop lpm @ kPa drop				
CSM-242R	16 @ 3	31 @ 6	30	2	8	24 x 54
	60.6 @ 20.7	117.3 @ 41.4	113.6	50.8	0.227	610 x 1,372
CSM-302R	25 @ 4	49 @ 7	45	2	12	30 x 60
	94.6 @ 27.6	185.5 @ 48.3	170.3	50.8	0.34	762 x 1,524
CSM-362R	35 @ 3	71 @ 11	70	2	18	36 x 60
	132.5 @ 20.7	268.7 @ 6.9	265	50.8	0.51	914 x 1,524
CSM-422R	48 @ 4	96 @ 13	95	2	24	42 x 60
	181.7 @ 27.6	363.4 @ 20.7	359.6	50.8	0.68	1,067 x 1,524

<sup>1</sup> Service flow rates for taste, odor & organic removal are based on 5 gpm/ft<sup>2</sup> (12 m<sup>2</sup>/hr/m<sup>2</sup>).

<sup>2</sup> Service flow rates for dechlorination are based on 10 gpm/ft<sup>2</sup> (24 m<sup>2</sup>/hr/m<sup>2</sup>).

<sup>3</sup> Backwash flow rates are based on 10 gpm/ft<sup>2</sup> (24 m<sup>2</sup>/hr/m<sup>2</sup>) using 50° F (10° C) water. A different backwash rate may be required depending upon water temperature or the type of carbon used.

NOTE: Operational, maintenance and replacement requirements are essential for this product to perform as advertised. Specifications shown are for single models. Also available in multiple tank configurations.

All pressure drop figures are based on new filter media and a water temperature of 60° F.

Depth filters are capable of 10 micron effluent water quality, whereas all other filter types are capable of 40 micron effluent water quality.

# Finally, an end-to-end solution from a single source.



## Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



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# The Culligan Hi-Flo® 50 Series Industrial Water Filter System



## EXAMPLES OF MARKETS SERVED:

- CLINICS
- EDUCATIONAL FACILITIES
- ENERGY & POWER
- FOOD & BEVERAGE PRODUCTION
- FOOD SERVICE/RESTAURANTS
- GROCERY
- HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL
- HOSPITALITY/LODGING
- MANUFACTURING
- MUNICIPAL DRINKING WATER
- OIL & GAS

## Durable High-Volume Water Filtration for Industrial Applications

The Culligan Hi-Flo 50 Filter reduces contaminants\* and solids that affect equipment efficiency and water quality. Configure the system based on your requirements, adding tanks and instrumentation as your usage increases. Use the Culligan-exclusive Smart Controller to easily manage and control your filtering options. Save time and effort with an automatic timer or sensors that reliably monitor your water usage and quality without constant supervision.

The Hi-Flo 50 industrial water filter is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Your investment in treated water pays off when you work with the best equipment and people. Contact Culligan today to discuss your water treatment options.

\*contaminants may not necessarily be in your water

## Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



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**Deionization  
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**Storage  
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**Distribution  
Solutions**

## Warranty

Culligan's Hi-Flo 50 water filters are backed by a limited 1-year warranty against defects in material, workmanship and corrosion. In addition, filter tanks are warranted for a period of 5 years.†

†See printed warranty for details. Culligan will provide a copy of the warranty upon request.

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	30-100 psig	210-690 kPa
Power Voltage Frequency Phase	120 VAC/24 VAC <sup>1</sup> 50/60Hz	
Feed Water Temperature	40-120° F	4-49° C

<sup>1</sup>120 Volt/24 Volt CUL/UL listed Transformer Included.

## Examples of Filter Applications

- Pretreatment – For water softeners, reverse osmosis and deionization systems
- Boilers – Turbidity reduction, reduce sludge blowdown
- Drinking Water – Turbidity reduction, chlorine reduction, improves taste and clarity
- Food And Beverage – Improved taste
- Industrial Processes – Reduces particulate matter
- Vehicle Wash – Turbidity reduction
- Office buildings – For heating plant pretreatment, tenant convenience, general housekeeping

## Standard Features

- Single or Multiple Tank Configurations
- Culligan's Smart Controller – More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls, a variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Telemetric Capability
- Regeneration initiation by choice or combination of time clock, meter or pressure differential switch
- Carbon Filters – For reduction of organics (flow rates up to 98 gpm), or chlorine (flow rates up to 196 gpm)
- Depth Filters – Flow rates up to 295 gpm
- Side-Mounted Valve Harness – Guided perimeter designed diaphragm valves are smooth operating and free of water hammer, all valve parts are easily accessible in the design for ease of service
- Corrosion resistant tanks – Made of low carbon steel with epoxy interior lining and finish coat painted exterior

## Optional Features & Accessories

- Skid Mounted – Fully pre-piped and wired systems for single point field utility connection of inlet, outlet, drain and power supply
- Patented Progressive Flow – Culligan's Smart Controller can monitor flow demands bringing additional tanks on-line or offline as flows increase or decrease
- ASME Code Tanks
- Flow Measuring Devices – Available for volume based regeneration initiation
- Differential Pressure Switch
- Gauge Packages – Pressure gauges provided for mounting at the inlet and outlet connection
- Remote Display
- RS232, RS485, Modbus PLC Output

## Hi-Flo 50 Water Filter System

Depth Filters						
Model	Service Flow Rates <sup>1</sup>		Backwash Flow <sup>2</sup> (gpm/lpm)	Pipe Size (in/mm)	Media Qty. (lbs/kg)	Filter Tank Size (in/mm)
	Normal	Peak				
	gpm @ psi drop lpm @ kPa drop	gpm @ psi drop lpm @ kPa drop				
HD-483	126 @ 5	189 @ 10	188	3	4280	48 x 60
	476.9 @ 34.5	715.4 @ 69	711.6	76.2	1941	1,219 x 1,524
HD-544	159 @ 5	239 @ 8	210	4	5500	54 x 60
	601.8 @ 34.5	904.6 @ 55.2	794.9	101.6	2495	1,372 x 1,524
HD-604	196 @ 4	295 @ 10	270	4	6930	60 x 60
	741.9 @ 27.6	1116.6 @ 69	1022	101.6	3143	1,524 x 1,524

<sup>1</sup> Service flow rates are based on:

Normal (10 gpm/ft<sup>2</sup> - 24 m<sup>3</sup>/hr/m<sup>2</sup>) - Best quality effluent at specified flow. Lowest pressure loss. Recommended for suspended solids loads up to and greater than 300 ppm.

Peak (15 gpm/ft<sup>2</sup> - 37 m<sup>3</sup>/hr/m<sup>2</sup>) - Very good quality effluent at specified flow. Increased pressure loss. Recommended for suspended solids loads < 300 ppm.

<sup>2</sup> Backwash flow rates are based on 12-14 gpm/ft<sup>2</sup> (29-34 m<sup>3</sup>/hr/m<sup>2</sup>) using 50° F (10° C) water. A different backwash rate may be required depending upon water temperature.

NOTE: Operational, maintenance and replacement requirements are essential for this product to perform as advertised. Specifications shown are for single models. Also available in multiple tank configurations.

Carbon Filters						
Model	Service Flow Rates		Backwash Flow <sup>3</sup> (gpm/lpm)	Pipe Size (in/mm)	Media Qty. (ft <sup>3</sup> /m <sup>3</sup> )	Filter Tank Size (in/mm)
	Taste Odor & Organic Removal <sup>1</sup>	Dechlorination <sup>2</sup>				
	gpm @ psi drop lpm @ kPa drop	gpm @ psi drop lpm @ kPa drop				
HR-4825	63 @ 4	126 @ 15	136	2.5	32	48 x 60
	238.5 @ 27.6	476.9 @ 103.4	514.8	63.5	0.906	1,219 x 1,524
HR-543	80 @ 6	159 @ 18	160	3	40	54 x 60
	302.8 @ 41.4	601.8 @ 124.1	605.6	76.2	1.133	1,372 x 1,524
HR-603	98 @ 1	196 @ 12	210	3	48	60 x 60
	370.9 @ 6.9	741.9 @ 13.8	794.9	76.2	1.359	1,524 x 1,524

<sup>1</sup> Service flow rates for taste, odor & organic removal are based on 5 gpm/ft<sup>2</sup> (12 m<sup>3</sup>/hr/m<sup>2</sup>).

<sup>2</sup> Service flow rates for dechlorination are based on 10 gpm/ft<sup>2</sup> (24 m<sup>3</sup>/hr/m<sup>2</sup>).

<sup>3</sup> Backwash flow rates are based on 10 gpm/ft<sup>2</sup> (24 m<sup>3</sup>/hr/m<sup>2</sup>) using 50° F (10° C) water. A different backwash rate may be required depending upon water temperature and the type of carbon used.

NOTE: Operational, maintenance and replacement requirements are essential for this product to perform as advertised. Specifications shown are for single models. Also available in multiple tank configurations.

All pressure drop figures are based on new filter media and a water temperature of 60° F.

Depth filters are capable of 10 micron effluent water quality, whereas all other filter types are capable of 40 micron effluent water quality.

# Finally, an end-to-end solution from a single source.



## Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



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# Pre-Treatment Products

## Dealkalizers



Pre-Treatment  
Solutions



Membrane  
Solutions



Deionization  
Solutions



Storage  
Solutions



Distribution  
Solutions



**EXAMPLES OF MARKETS SERVED:**

- CLINICS
- EDUCATIONAL FACILITIES
- ENERGY & POWER
- FOOD & BEVERAGE PRODUCTION
- FOOD SERVICE/RESTAURANTS
- GROCERY
- HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL
- HOSPITALITY/LODGING
- MANUFACTURING
- MUNICIPAL DRINKING WATER
- OIL & GAS

## Lower Alkalinity with the HE Dealkalizer

When your water quality requirements include reducing alkalinity for variable volume applications, choose the Culligan HE dealkalizer. The HE dealkalizer is a post-treatment option for your Culligan water softening system, reducing additional contaminants\* in the water that affect the efficiency of water-using equipment. Set up the dealkalizer and manage your system using the Culligan exclusive GBE controller.

The HE dealkalizer is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to discuss your water treatment options.

\*contaminants may not necessarily be in your water

**Culligan Matrix Solutions Advantages:**

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



**Pre-Treatment Solutions**



Membrane Solutions



Deionization Solutions



Storage Solutions



Distribution Solutions

### Examples of Dealkalizer Applications

- ✓ Apartment buildings, assisted living facilities and hotels — Quality water for boilers
- ✓ Office buildings — For heating plant pretreatment
- ✓ Grocery/Retail — Quality water for aesthetics and help extend equipment life
- ✓ Light industry — For process and make-up water, boiler and cooling system pretreatment

### Warranty

Culligan's HE dealkalizers are backed by a limited 1-year warranty against defects in materials, workmanship, and corrosion. The plastic conditioner tank has a 5-year warranty. See printed warranty for details.†

†See printed warranty for details. Culligan will provide a copy of the warranty upon request.

### Standard Features

- ✓ Single or Multiple Tank Configurations — Flow rates up to 22 gpm per tank
- ✓ Culligan's Smart Controller — More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls a variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- ✓ Regeneration initiation by choice or combination of time clock, flow meter
- ✓ Telemetric Capability
- ✓ Corrosion Resistant Positive Motor-Driven Regeneration Valve — Motor driven piston is reliable under server water conditions, resists dirt, iron and turbidity
- ✓ Corrosion Resistant Tanks — Made from fiberglass reinforced polyester
- ✓ Under-drain design enhances dealkalizer capacity and reduces pressure loss
- ✓ Flow Meter
- ✓ UL/CUL/CE Ratings

### Optional Features & Accessories

- ✓ Dubl-Safe™ Brine System for softeners — Positive overflow protection, automatic refill control is backed up by shutoff float valve to reduce chance of overflow
- ✓ Patented Progressive Flow — Culligan's Smart Controller can monitor flow demands bringing additional tanks on-line or offline as flows increase or decrease
- ✓ Bypass valve
- ✓ Skid Mounted System
- ✓ Remote Display
- ✓ RS232, RS485, Modbus PLC Output

### System Specifications

Specification	US	Metric
Pipe Size, All Units	1.5"	
Maximum Operating Pressure	20–125 psig	135–860 kPa
Power Voltage Frequency Phase	24 50/60 Hz <sup>1</sup>	
Feed Water Temperature	33–120° F	0-48° C
Power Consumption	3/100 Watts	
Vacuum	None <sup>2</sup>	
Turbidity	5 NTU, max. <sup>3</sup>	
Chlorine	1 mg/L, max. <sup>3</sup>	
Iron	5 mg/L	

<sup>1</sup> 120 Volt/24 Volt CUL/UL listed Transformer Included.

<sup>2</sup> Tank warranty is void if subject to vacuum.

<sup>3</sup> See media specification for details.

### HE Dealkalizer System

Model	Resin Qty. (ft <sup>3</sup> /L)	Flow Rates (gpm @ psi / lpm @ kPa)		Tank Size*** (in./mm)	
		Continuous*	Peak**	Resin Tank	Brine Tank****
CA-14	2	5 @ 8	10 @ 14	14 x 47	18 x 38
	57	18.9 @ 55.2	37.9 @ 96.5	356 x 1,194	457 x 965
CA-16	4	7 @ 8	14 @ 15	16 x 65	18 x 38
	113	26.5 @ 55.2	53 @ 103.4	406 x 1,651	457 x 965
CA-18	5	9 @ 9	18 @ 15	18 x 65	18 x 38
	142	34.1 @ 62	68.1 @ 103.4	457 x 1,651	457 x 965
CA-20	7	11 @ 10	22 @ 14	21 x 62	18 x 38
	198	41.6 @ 68.9	83.3 @ 96.5	533 x 1,575	457 x 965

\*Flow rate is based on pressure drop.

\*\*Flow rate is based on pressure drop.

\*\*\*Dimensions are diameter by tank height.

\*\*\*\*Brine systems are optional.

Flow rates shown are per tank.

Low flow channeling (flow rates less than 0.5 gallons per minute per cubic foot of resin) may cause leakage into effluent.

Valve only flow rate is 42 gpm @ 15 psi and 53 gpm @ 25 psi.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



# The Culligan Side Mount (CSM™) Series Heavy-Duty Dealkalizer System



## EXAMPLES OF MARKETS SERVED:

CLINICS  
EDUCATIONAL FACILITIES  
ENERGY & POWER  
FOOD & BEVERAGE PRODUCTION  
FOOD SERVICE/RESTAURANTS  
GROCERY  
HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL  
HOSPITALITY/LODGING  
MANUFACTURING  
MUNICIPAL DRINKING WATER  
OIL & GAS

## Efficient and Scalable Heavy-Duty Water Treatment System

When your water quality requirements include reducing alkalinity, choose the Culligan Side Mount heavy-duty commercial dealkalizer for high volume low-flow conditioning. The CSM heavy-duty commercial dealkalizer complements your Culligan CSM water softening system by reducing carbonates in hard water after softening. Manage your system using the Culligan-exclusive Smart Controller, and let settings triggered by flow, time, or water quality sensors automate regeneration. The CSM dealkalizer improves your water and reduces residue on your equipment.

The CSM dealkalizer is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Your investment in treated water pays off when you work with the best equipment and people. Contact Culligan today to learn more about the CSM dealkalizer.

\*contaminants are not necessarily in your water.

## Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



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## Warranty

Culligan's CSM dealkizer are backed by a limited 1-year warranty against defects in material, workmanship and corrosion. In addition, tanks are warranted for a period of 5 years.†

† See printed warranty for details. Culligan will provide a copy of the warranty upon request.

## Examples of Dealkalizer Applications

- Educational Facilities—Boiler and cooling tower make-up water for improved energy costs
- Apartment buildings, assisted living facilities and hotels—Quality water for boilers
- Grocery/Retail—Quality water for aesthetics and help extend equipment life
- Light industry—For process and make-up water, boiler and cooling system pretreatment
- Office buildings—For heating plant pretreatment

## Standard Features

- Single, Multiple Tank Configurations—Flow rates up to 100 gpm per tank
- Culligan's Smart Controller—More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls, a variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Telemetric Capability
- Regeneration initiation by choice or combination of time clock, meter
- Culligan's Multiport Valve—Guided perimeter designed diaphragm valves are smooth operating and free of water hammer, all valve parts are easily accessible in the design for ease of service
- Corrosion resistant tanks—Made of low carbon steel with epoxy interior lining and finish coat painted exterior

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	30–100 psig	210–690 kPa
Power Voltage Frequency Phase	120 Volts 50/60Hz	
Feed Water Temperature	40–120° F	4–49° C
Turbidity Chlorine Iron	5 NTU, max. <sup>2</sup> 1 mg/L, max. <sup>2</sup> 5 mg/L, max. <sup>2</sup>	

<sup>1</sup> 120 Volt/24 Volt CUL/UL listed Transformer Included.

<sup>2</sup> See media specification for details.

## Optional Features & Accessories

- Corrosion resistant brine system construction for long life
- Skid Mounted—Fully pre-piped and wired systems for single point field utility connection of inlet, outlet, drain and power supply
- Patented Progressive Flow—Culligan's Smart Controller can monitor flow demands bringing additional tanks on-line or offline as flows increase or decrease
- ASME Code Tanks
- Brine Reclaim—Reduces operating costs
- Flow Measuring Devices—Available for direct connection to the Culligan Smart Controller for volume based regeneration initiation
- Remote Display
- RS232, RS485, Modbus PLC Output

## CSM Dealkalizer System

Model	Resin Qty. (ft <sup>3</sup> /L)	Pipe Size (in/mm)	Flow Rates (gpm@psi / lpm@kPa)		Tank Size*** (in/mm)	
			Continuous*	Peak**	Resin Tank	Brine Tank****
CA-242	6.5	2	16 @ 2	32 @ 4	24 x 54	24 x 48
	184	2	60.6 @ 13.8	121.1 @ 27.6	610 x 1,372	610 x 1,219
CA-302	12	2	25 @ 2	50 @ 6	30 x 60	24 x 48
	340	2	94.6 @ 13.8	189.3 @ 41.4	762 x 1,524	610 x 1,219
CA-362	18	2	35 @ 3	70 @ 9	36 x 60	30 x 48
	510	2	132.5 @ 20.7	265 @ 62	914 x 1,524	762 x 1,219
CA-422	25	2	50 @ 5	100 @ 16	42 x 60	36 x 48
	708	2	189.3 @ 34.5	378.5 @ 110.3	1,067 x 1,524	914 x 1,219

\* Flow rate is based on pressure drop.

\*\* Flow rate is based on pressure drop.

\*\*\* Dimensions are diameter by tank height.

\*\*\*\* Brine systems are optional.

Flow rates shown are per tank.

Low flow channeling (flow rates less than 0.5 gallons per minute per cubic foot of resin) may cause leakage into effluent.

CSM product formerly sold under the Bruner label.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



## The Culligan Hi-Flo® 50 Series Industrial Dealkalizer System



### EXAMPLES OF MARKETS SERVED:

- CLINICS
- EDUCATIONAL FACILITIES
- ENERGY & POWER
- FOOD & BEVERAGE PRODUCTION
- FOOD SERVICE/RESTAURANTS
- GROCERY
- HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL
- HOSPITALITY/LODGING
- MANUFACTURING
- MUNICIPAL DRINKING WATER
- OIL & GAS

### Reduced Alkalinity for High-Volume Applications

The Culligan Hi-Flo 50 dealkalizer reduces alkalinity in water used for commercial and industrial applications. The Hi-Flo 50 dealkalizer is a post-treatment option for your Culligan water softening system that further reduces contaminants\* in the water that affect the performance and efficiency of water-using equipment. The scalable configuration helps meet your growing needs for high-quality water. Manage the Hi-Flo 50 dealkalizer system with the Culligan-exclusive Smart Controller that is easy to program and use.

The Hi-Flo 50 dealkalizer is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to learn more about the Hi-Flo 50 dealkalizer.

\*contaminants may not necessarily be in your water

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



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### Examples of Dealkalizer Applications

- Boiler and Cooling tower make-up water — Lower energy costs
- Manufacturing — Water treatment for consistent production
- Food Manufacturing ingredient, process and utility water treatment
- Process water treatment

### Warranty

Culligan's Hi-Flo 50 dealkalizers are backed by a limited 1-year warranty against defects in material, workmanship and corrosion. In addition, tanks are warranted for a period of 5 years.†

†See printed warranty for details. Culligan will provide a copy of the warranty upon request.

### Standard Features

- Single or Multiple Tank Configurations — Flow rates up to 200 gpm per tank
- Culligan's Smart Controller — More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls, a variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs
- Regeneration initiation by choice or combination of time clock or meter
- Telemetric Capability
- Side-Mounted Valve Harness — Guided perimeter designed diaphragm valves are smooth operating and free of water hammer, all valve parts are easily accessible in the design for ease of service
- Corrosion resistant tanks — Made of low carbon steel with epoxy interior lining and finish coat painted exterior

### Optional Features & Accessories

- Corrosion resistant brine system construction for long life
- Skid Mounted — Fully pre-piped and wired systems for single point field utility connection of inlet, outlet, drain and power supply
- Patented Progressive Flow — Culligan's Smart Controller can monitor flow demands bringing additional tanks on-line or offline as flows increase or decrease
- ASME Code Tanks
- Brine Reclaim — Reduces operating costs by recycling a portion of the regeneration water
- Flow Measuring Devices — Available for volume based regeneration initiation
- Gauge Packages — Pressure gauges provided for mounting at the inlet and outlet connection
- Remote Display
- RS232, RS485, Modbus PLC Output

### System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	30-120 psig	210-830 kPa
Power Voltage Frequency Phase	120 VAC/24 VAC <sup>1</sup> 50/60Hz	
Feed Water Temperature	40–120° F	4-49° C
Turbidity, maximum	5 NTU	
Chlorine, max.: 0 mg/L	1 mg/l	
Iron, maximum	5 mg/l	

<sup>1</sup> 120 Volt/24 Volt CUL/UL listed Transformer Included.  
<sup>2</sup> See media specification for details.

### Hi-Flo 50 Dealkalizer System

Model	Resin Qty. (Ft <sup>3</sup> /L)	Pipe Size (in/mm)	Flow Rates (gpm@psi / lpm@kPa)		Tank Size (in/mm)	
			Continuous*	Peak**	Resin Tank	Brine Tank***
CA-483	35	3	60 @ 4	120 @ 7	48 x 60	48 x 60
	991	3	227.1 @ 27.6	454.2 @ 48.3	1,219 x 1,524	1,219 x 1,524
CA-543	44	3	80 @ 5	160 @ 10	54 x 60	48 x 60
	1246	3	302.8 @ 34.5	605.6 @ 68.9	1,372 x 1,524	1,219 x 1,524
CA-604	54	4	100 @ 6	200 @ 12	60 x 60	60 x 60
	1529	4	378.5 @ 41.4	757 @ 82.7	1,524 x 1,524	1,524 x 1,524

\* Flow rate is based on pressure drop.  
 \*\* Flow rate is based on pressure drop.  
 \*\*\* Dimensions are diameter by tank height.  
 \*\*\*\* Per Tank

Flow rates shown are per tank.  
 Low flow channeling (flow rates less than 0.5 gallons per minute per cubic foot of resin) may cause leakage into effluent.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

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# Membrane Products

## Reverse Osmosis Systems



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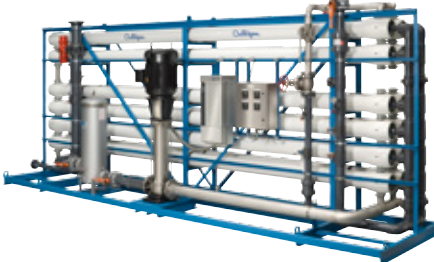


Distribution  
Solutions





# Commercial & Industrial Reverse Osmosis Systems

Model	G3	G3+
Production Rate	20 - 300 GPM	20 - 300 GPM
		
Features		
Low pressure auto re-start	√	√
Product flow meter (rotameter)		
Waste flow meter (rotameter)		
Feed flow meter (digital)	√	√
Product flow meter (digital)	√	√
Waste flow meter (digital)	√	√
% recovery reading	√	√
% reject reading	√	√
Product TDS reading	√	√
Feed TDS reading	√	√
Temperature	√	√
Pressure Transducers	√	√
Normalized flow	√	
Fast-flush	√	√
Telemetry option	√	√
Wireless remote option	√	√
Controller	Culligan Smart Controller (GBE)	PLC
Pump brand	Grundfos	Grundfos
Power, Standard	460 V / 3 ph / 60 Hz	460 V / 3 ph / 60 Hz



## Culligan® LC Series Reverse Osmosis System



### Compact Solution for Light Commercial Water Treatment

The Culligan LC Series Reverse Osmosis system is a cost-effective configuration for light commercial water treatment. The LC RO system reduces contaminants\* from your water that affect equipment efficiency, helping you meet water quality requirements while reducing maintenance costs. The space-saving wall mount installation doesn't compromise capacity or quality, and you can add features that optimize your water treatment performance.

The LC Reverse Osmosis system is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Consult with a Culligan representative to create your solution.

\*contaminants may not necessarily be in your water

#### EXAMPLES OF MARKETS SERVED:

- CLINICS
- EDUCATIONAL FACILITIES
- ENERGY & POWER
- FOOD & BEVERAGE PRODUCTION
- FOOD SERVICE/RESTAURANTS
- GROCERY
- HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL
- HOSPITALITY/LODGING
- MANUFACTURING
- MUNICIPAL DRINKING WATER
- OIL & GAS

#### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation



Pre-Treatment  
Solutions



Membrane  
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Deionization  
Solutions



Storage Solutions



Distribution  
Solutions

## Warranty

Culligan's LC Series Reverse Osmosis Systems are backed by a one year limited warranty against defects in material and workmanship. See printed warranty for details. Culligan will provide a copy of the warranty upon request.

## Examples of RO Applications

- Food & Beverage — Improved taste and increased cost savings
- Ice Production/Drinking Water — Reduces scaling; improves taste and clarity
- Restaurants — Improves steamer operation
- Humidification — Reduces scaling and dusting
- Grocery Stores — Prevents scaling in vegetable misters
- Horticulture — Reduces leaf spotting and mineral build up in potting soils
- Water Jet Cutting — Improves operating efficiency; helps extend orifice life

## Standard Features

- Self contained and compact for wall mounting installation
- Thin Film Composite RO membranes — reduces dissolved minerals, as well as colloids, particles, organics and silica†
- Exclusive quick change membrane housings constructed of aluminum and lined with polyethylene for corrosion resistance
- Hydraulic operation does not require electricity
- Automatic Shut-off valve — to save water when the optional pressure storage tank is full
- Cartridge prefiltration — with replaceable element to reduce suspended particles (5 microns) to help extend component life; includes integral pressure relief valve
- Waste Restrictor—A fixed flow restrictor maintains the proper recovery ratio of product-to-feed water flow
- Granular Activated Carbon — prefiltration to reduce chlorine and organics

† Do not use on water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after system.

## Optional Features & Accessories

- Booster Pump Kit — To increase feed pressure by ~40 PSI. Includes pump, transformer, pressure switch and solenoid valve
- TDS Monitor — “Press to test” indicator. Green light for good quality, red light for poor quality
- Adjustable sensitivity via dipswitch selection, battery operated
- Product Water Storage Tanks

## System Specifications

Specification	US	Metric
Inlet Pressure, minimum (dynamic) without booster pump	60 psig	414 kPa
Inlet Pressure, maximum	120 psig	828 kPa
Feed Water Temperature	33–100°F	1–38°C
Turbidity, maximum	1.0 NTU	1.0 NTU
pH Range	5–10	5–10
Free Chlorine	<0.1 ppm	<0.1 ppm
Chloramine, maximum	3 mg/L	3 mg/L
Total Dissolved Solids, maximum:	2500 mg/L	2500 mg/L
Silt Density Index, maximum:	3.0	3.0
Langlier Saturation Index, maximum:	0.0	0.0
Iron, maximum	1.0 mg/l	1.0 mg/l
Operating Weight	14–15 lbs	6–7 kgs

## LC Series Reverse Osmosis System

Model	Design Recovery % <sup>1</sup>	Automatic shut-off valve	5 micron prefilter	GAC prefilter	100* gpd 378* lpd RO Cartridge	200* gpd 757* lpd RO Cartridge
LC-1PC	30%	✓	✓	✓	✓	
LC-2PC		✓	✓	✓		✓

\*Approximate nominal capacity based on properly pretreated feed water of 600 ppm TDS as NaCl, 77° F, Silt Density Index below 3.0, and 60 psi applied pressure supplying water to atmosphere. Productivity will vary depending on the feed water conditions.  
<sup>1</sup> Actual recovery will depend on feed water source, SDI, temperature and product back pressure.

Finally, an end-to-end solution from a single source.



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# The Culligan® E1 Series Reverse Osmosis System



### EXAMPLES OF MARKETS SERVED:

- |                           |                    |
|---------------------------|--------------------|
| AGRICULTURE               | LABORATORIES       |
| ASSISTED LIVING           | LAUNDRY            |
| AUTOMOTIVE                | MANUFACTURING      |
| BIO-PHARMACEUTICAL        | MARINE             |
| BOTANICALS                | MILITARY           |
| BOTTLED WATER PLANTS      | MULTI-UNIT HOUSING |
| CASINOS                   | MUNICIPALITIES     |
| CHEMICAL PROCESSING       | PLATING/COATING    |
| COMMERCIAL BUILDINGS      | PRINTING           |
| DAIRIES                   | PULP/PAPER         |
| EDUCATIONAL FACILITIES    | OIL/PETROLEUM/GAS  |
| ENERGY/POWER/COGENERATION | TEXTILE            |
| ELECTRONICS               | THEME PARKS        |
| GOVERNMENT                | UNIVERSITIES       |
| GROCERY                   | VEHICLE WASH       |
| FOOD/BEVERAGE             |                    |
| HEALTH CLUBS              |                    |
| HOTELS/LODGING            |                    |
| HOSPITALS/HEALTHCARE      |                    |
| INK/DYE PRODUCTION        |                    |

## Excellent water quality is a smart business decision.

The E1 Reverse Osmosis System is an economical water treatment solution, which reduces operating and post treatment costs. The E1 Reverse Osmosis system helps you reduce maintenance costs by reducing contaminants\* from your water that affect taste and clog equipment. Control your installation costs by using a system configured for your unique needs. Keep your operating costs low with an easy-to-use electronic controller.

The E1 RO is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Consult with a Culligan representative to create your solution.

\*contaminants may not necessarily be in your water

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Culligan CP+ Controller



Pre-Treatment Solutions



**Membrane Solutions**



Deionization Solutions



Storage Solutions



Distribution Solutions

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	20-50 psig	1.4 – 3.5 bar
Maximum Operating Pressure	95–225 psig	6.6 – 15.5 bar
Power Voltage Frequency Phase	115 60 Hz 1	115 60 Hz 1
Feed Water Temperature	33–100° F	1-40° C
Turbidity, maximum	< 1 NTU	< 1 NTU
pH Range	3 – 11	3 – 11
Chlorine, max.	0 mg/l	0 mg/l
Total Dissolved Solids, max.	2500 mg/l	2500 mg/l
Silt Density Index Well Water Surface Water	< 3 < 5	< 3 < 5
Iron, maximum	< 0.1 mg/l	< 0.1 mg/l
Salt Rejection, nominal	> 98 %	> 98 %
Product Water Hardness	< 1% Raw Hardness	< 1% Raw Hardness

## Examples of RO Applications

- Ice Production/Drinking Water— Reduces scaling, improves taste and clarity
- Steam Production— Reduces scaling and maintenance
- Humidification — Reduces scaling and dusting
- Mistng—Reduces scaling and help extend equipment life
- Pretreatment for High Purity Systems— Reduces regeneration requirements
- Reclaim/Recycling — Water conservation
- Washing and Rinsing — Improves performance, spot-free rinses

## Standard Features

- Wall Mount Design
- Rotary Vane Pump
- Inlet Solenoid Valve
- Pretreatment Sediment Filter
- Concentrate and Recirculation Throttling Valves
- Pressure Indicators
- FRP Membrane Housings
- Culligan CP+ Control Panel
  - Level Control input
  - Pretreatment Lockout
  - Startup Flush/timed Flush
  - Low pressure auto-restart
  - Indicator Lights

## Optional Features & Accessories

- Multi-Stage Pretreatment Filters
- Storage Tanks
- Level Controls
- Chemical Feed Pumps
- Ultraviolet Sterilization
- Pressurized Storage System
- Floor Stand
- Global Power Platform
- 220 v/50 HZ
- Additional Customization Available on request
- Auto Shut Down on High Product TDS

## E1 Plus Reverse Osmosis System

Model	Nominal Capacity* (gpm/lpm)	Nominal Capacity* (gpd/m <sup>3</sup> /h)	Module Qty & Size	Nominal System Recovery (%)	Motor HP - KW	Dimension L x W x H (inches— millimeters)
E1-1S	0.17	250	(1), 2.5" x 21"	25	1/3	37 x 10 x 37.75
	0.65	0.04			0.25	940 x 254 x 959
E1-2S	0.35	500	(2), 2.5" x 21"	25	1/3	37 x 10 x 37.75
	1.31	0.08			0.25	940 x 254 x 959
E1-3S	0.52	750	(3), 2.5" x 21"	50	1/3	37 x 10 x 37.75
	1.97	0.12			0.25	940 x 254 x 959
E1-4S	0.69	1000	(4), 2.5" x 21"	50	1/3	37 x 10 x 37.75
	2.63	0.16			0.25	940 x 254 x 959
E1-2L	0.83	1200	(2), 2.5" x 40"	50	3/4	37 x 10 x 46.25
	3.15	0.19			0.56	940 x 254 x 1175
E1-3L	1.18	1700	(3), 2.5" x 40"	50	3/4	37 x 10 x 46.25
	4.47	0.27			0.56	940 x 254 x 1175
E1-4L	1.53	2200	(4), 2.5" x 40"	50	3/4	37 x 10 x 46.25
	5.78	0.35			0.56	940 x 254 x 1175
E1-1F	1.39	2000	(1), 4 x 40	25	3/4	37 x 10 x 46.25
	5.26	0.32			0.56	940 x 254 x 159
E1-2F	2.78	4000	(2), 4 x 40	50	3/4	37 x 10 x 46.25
	10.52	0.63			0.56	940 x 254 x 159

\*Nominal capacity based on new RO membranes operating on a properly pretreated feed water of 500 ppm TDS as NaCl, 77 °F (25 °C), Silt Density Index (SDI) below 3, and supplying water to atmosphere. Productivity will vary depending on the actual feed water quality and temperature.

**Finally, an end-to-end solution from a single source.**



**Place your commercial and industrial water treatment needs in the hands of a global leader.**

For over 75 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



# The Culligan® M1 Series Reverse Osmosis System



### EXAMPLES OF MARKETS SERVED:

- |                           |                    |
|---------------------------|--------------------|
| AGRICULTURE               | LABORATORIES       |
| ASSISTED LIVING           | LAUNDRY            |
| AUTOMOTIVE                | MANUFACTURING      |
| BIO-PHARMACEUTICAL        | MARINE             |
| BOTANICALS                | MILITARY           |
| BOTTLED WATER PLANTS      | MULTI-UNIT HOUSING |
| CASINOS                   | MUNICIPALITIES     |
| CHEMICAL PROCESSING       | PLATING/COATING    |
| COMMERCIAL BUILDINGS      | PRINTING           |
| DAIRIES                   | PULP/PAPER         |
| EDUCATIONAL FACILITIES    | OIL/PETROLEUM/GAS  |
| ENERGY/POWER/COGENERATION | TEXTILE            |
| ELECTRONICS               | THEME PARKS        |
| GOVERNMENT                | UNIVERSITIES       |
| GROCERY                   | VEHICLE WASH       |
| FOOD/BEVERAGE             |                    |
| HEALTH CLUBS              |                    |
| HOTELS/LODGING            |                    |
| HOSPITALS/HEALTHCARE      |                    |
| INK/DYE PRODUCTION        |                    |

## Excellent water quality is a smart business decision

The M1 Reverse Osmosis System is a cost effective water treatment solution with enhanced features, which help reduce operating and post treatment costs. The M1 Reverse Osmosis system helps you reduce maintenance costs by reducing contaminants\* from your water that affect taste and clog equipment. Control your installation costs by using a system configured for your unique needs. Keep your operating costs low with an easy-to-use electronic controller.

The M1 RO is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Consult with a Culligan representative to create your solution.

\*contaminants may not necessarily be in your water

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Culligan CP+ Controller



Pre-Treatment Solutions



**Membrane Solutions**



Deionization Solutions



Storage Solutions



Distribution Solutions

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	20-50 psig	1.4 – 3.5 bar
Maximum Operating Pressure	95–225 psig	6.6 – 15.5 bar
Power Voltage Frequency Phase	115 60 Hz 1	115 60 Hz 1
Feed Water Temperature	33–100° F	1-40° C
Turbidity, maximum	< 1 NTU	< 1 NTU
pH Range	3 – 11	3 – 11
Chlorine, max.	0 mg/l	0 mg/l
Total Dissolved Solids, max.	2500 mg/l	2500 mg/l
Silt Density Index Well Water Surface Water	< 3 < 5	< 3 < 5
Iron, maximum	< 0.1 mg/l	< 0.1 mg/l
Salt Rejection, nominal	> 98 %	> 98 %
Product Water Hardness	< 1% Raw Hardness	< 1% Raw Hardness

## Examples of RO Applications

- Ice Production/Drinking Water—Reduces scaling, improves taste and clarity
- Steam Production—Reduces scaling and maintenance
- Humidification—Reduces scaling and dusting
- Mistng—Reduces scaling and help extend equipment life
- Pretreatment for High Purity Systems—Reduces regeneration requirements
- Reclaim/Recycling—Water conservation
- Washing and Rinsing—Improves performance, spot-free rinses

## Standard Features

- Wall Mount Design
- Rotary Vane Pump
- Inlet Solenoid Valve
- Pretreatment Sediment Filter
- Concentrate and Recirculation Throttling Valves
- Pressure Indicators
- FRP Membrane Housings
- Rotameter style flow meters
- Culligan CP Control Panel
  - Level Control input
  - Pretreatment Lockout
  - Startup Flush/timed Flush
  - Low pressure auto-restart
  - Indicator Lights

## Optional Features & Accessories

- Multi-Stage Pretreatment Filters
- Storage Tanks
- Level Controls
- Chemical Feed Pumps
- Ultraviolet Sterilization
- Pressurized Storage System
- Floor Stand
- Global Power Platform
- 220 v/50 HZ
- Additional Customization Available on request
- Auto Shut Down on High Product TDS

## M1 Reverse Osmosis System

Model	Nominal Capacity* (gpm/lpm)	Nominal Capacity* (gpd/m <sup>3</sup> /h)	Module Qty & Size	Nominal System Recovery (%)	Motor HP - KW	Dimension L x W x H (inches— millimeters)
M1-1S	0.17	250	(1), 2.5"x 21"	25	1/3	37 x 10 x 37.75
	0.65	0.04			0.25	940 x 254 x 959
M1-2S	0.35	500	(2), 2.5"x 21"	25	1/3	37 x 10 x 37.75
	1.31	0.08			0.25	940 x 254 x 959
M1-3S	0.52	750	(3), 2.5"x 21"	50	1/3	37 x 10 x 37.75
	1.97	0.12			0.25	940 x 254 x 959
M1-4S	0.69	1000	(4), 2.5"x 21"	50	1/3	37 x 10 x 37.75
	2.63	0.16			0.25	940 x 254 x 959
M1-2L	0.83	1200	(2), 2.5"x 40"	50	3/4	37 x 10 x 46.25
	3.15	0.19			0.56	940 x 254 x 1175
M1-3L	1.18	1700	(3), 2.5"x 40"	50	3/4	37 x 10 x 46.25
	4.47	0.27			0.56	940 x 254 x 1175
M1-4L	1.53	2200	(4), 2.5"x 40"	50	3/4	37 x 10 x 46.25
	5.78	0.35			0.56	940 x 254 x 1175
M1-1F	1.39	2000	(1), 4 x 40	25	3/4	37 x 10 x 46.25
	5.26	0.32			0.56	940 x 254 x 159
M1-2F	2.78	4000	(2), 4 x 40	50	3/4	37 x 10 x 46.25
	10.52	0.63			0.56	940 x 254 x 159

\*Nominal capacity based on new RO membranes operating on a properly pretreated feed water of 500 ppm TDS as NaCl, 77 °F (25 °C), Silt Density Index (SDI) below 3, and supplying water to atmosphere. Productivity will vary depending on the actual feed water quality and temperature.

## Finally, an end-to-end solution from a single source.



## Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 75 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.





# The Culligan® G1 Series Reverse Osmosis System



### EXAMPLES OF MARKETS SERVED:

- |                           |                    |
|---------------------------|--------------------|
| AGRICULTURE               | LABORATORIES       |
| ASSISTED LIVING           | LAUNDRY            |
| AUTOMOTIVE                | MANUFACTURING      |
| BIO-PHARMACEUTICAL        | MARINE             |
| BOTANICALS                | MILITARY           |
| BOTTLED WATER PLANTS      | MULTI-UNIT HOUSING |
| CASINOS                   | MUNICIPALITIES     |
| CHEMICAL PROCESSING       | PLATING/COATING    |
| COMMERCIAL BUILDINGS      | PRINTING           |
| DAIRIES                   | PULP/PAPER         |
| EDUCATIONAL FACILITIES    | OIL/PETROLEUM/GAS  |
| ENERGY/POWER/COGENERATION | TEXTILE            |
| ELECTRONICS               | THEME PARKS        |
| GOVERNMENT                | UNIVERSITIES       |
| GROCERY                   | VEHICLE WASH       |
| FOOD/BEVERAGE             |                    |
| HEALTH CLUBS              |                    |
| HOTELS/LODGING            |                    |
| HOSPITALS/HEALTHCARE      |                    |
| INK/DYE PRODUCTION        |                    |

## Excellent water quality is a smart business decision

When you install a G1 Reverse Osmosis system, you combine cost-effective system configuration, cost-minimizing operations, and reduced post-treatment costs. The G1 Reverse Osmosis system helps you reduce maintenance costs by reducing contaminants\* from your water that affect taste and clog equipment. Control your installation costs by using a system configured for your unique needs. Keep your operating costs low by monitoring and changing the G1 RO settings with an easy-to-use electronic controller. Purchasing a G1 RO is more than a sound business decision—you improve the quality of life for your building.

The G1 RO is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Consult with a Culligan representative to create your solution.

\*contaminants may not necessarily be in your water

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



Pre-Treatment Solutions



**Membrane Solutions**



Deionization Solutions



Storage Solutions



Distribution Solutions

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	20-50 psig	1.4 – 3.5 bar
Maximum Operating Pressure	95–225 psig	6.6 – 15.5 bar
Power Voltage Frequency Phase	115 60 Hz 1	115 60 Hz 1
Feed Water Temperature	33–100° F	1-40° C
Turbidity, maximum	< 1 NTU	< 1 NTU
pH Range	3 – 11	3 – 11
Chlorine, max.	0 mg/l	0 mg/l
Total Dissolved Solids, max.	2500 mg/l	2500 mg/l
Silt Density Index Well Water Surface Water	< 3 < 5	< 3 < 5
Iron, maximum	< 0.1 mg/l	< 0.1 mg/l
Salt Rejection, nominal	> 98 %	> 98 %
Product Water Hardness	< 1% Raw Hardness	< 1% Raw Hardness

## Examples of RO Applications

- Ice Production/Drinking Water—Reduces scaling, improves taste and clarity
- Steam Production—Reduces scaling and maintenance
- Humidification—Reduces scaling and dusting
- Misting—Reduces scaling and helps extend equipment life
- Pretreatment for High Purity Systems—Reduces regeneration requirements
- Reclaim/Recycling—Water conservation
- Washing and Rinsing—Improves performance, spot-free rinses

## Standard Features

- Wall Mount Design
- Rotary Vane Pump
- Inlet Solenoid Valve
- Pretreatment Sediment Filter
- Concentrate and Recirculation Throttling Valves
- Pressure Indicators
- FRP Membrane Housings
- Electronic Turbine Style Flow Meters
- Culligan Electronic Control Panel
  - Telemetric Capability
  - Comprehensive System Monitoring
  - Lighted Alphanumeric Display
  - TDS Monitoring of Water Quality
  - Low Pressure Switch and Auto Restart
- Connection for Pretreatment Signal Switch and Level Control
- Elapsed run time monitor
- Visual Alarms
- Remote Alarm Output Connection
- System Flow Rate Monitoring
- User Selectable Flush Options

## Optional Features & Accessories

- Leak Sensor
- Multi-Stage Pretreatment Filters
- Wireless Remote Digital Display
- RS232, RS485 Output
- Storage Tanks
- Level Controls
- Chemical Feed Pumps
- Ultraviolet Sterilization
- Pressurized Storage System
- Floor Stand
- Global Power Platform
- 220 v/50 HZ
- Additional Customization Available on Request

## G1 Reverse Osmosis System

Model	Nominal Capacity* (gpm/lpm)	Nominal Capacity* (gpd/m <sup>3</sup> /h)	Module Qty & Size	Nominal System Recovery (%)	Motor HP - KW	Dimension L x W x H (inches– millimeters)
G1-1S	0.17	250	(1), 2.5" x 21"	25	1/3	37 x 10 x 37.75
	0.65	0.04			0.25	940 x 254 x 959
G1-2S	0.35	500	(2), 2.5" x 21"	25	1/3	37 x 10 x 37.75
	1.31	0.08			0.25	940 x 254 x 959
G1-3S	0.52	750	(3), 2.5" x 21"	50	1/3	37 x 10 x 37.75
	1.97	0.12			0.25	940 x 254 x 959
G1-4S	0.69	1000	(4), 2.5" x 21"	50	1/2	37 x 10 x 37.75
	2.63	0.16			0.37	940 x 254 x 959
G1-2L	0.83	1200	(2), 2.5" x 40"	50	3/4	37 x 10 x 46.25
	3.15	0.19			0.56	940 x 254 x 1175
G1-3L	1.18	1700	(3), 2.5" x 40"	50	3/4	37 x 10 x 46.25
	4.47	0.27			0.56	940 x 254 x 1175
G1-4L	1.53	2200	(4), 2.5" x 40"	50	3/4	37 x 10 x 46.25
	5.78	0.35			0.56	940 x 254 x 1175
G1-1F	1.39	2000	(1), 4 x 40	25	1	37 x 10 x 46.25
	5.26	0.32			0.75	940 x 254 x 159
G1-2F	2.78	4000	(2), 4 x 40	50	1	37 x 10 x 46.25
	10.52	0.63			0.75	940 x 254 x 159

\*Nominal capacity based on new RO membranes operating on a properly pretreated feed water of 500 ppm TDS as NaCl, 77 °F (25 °C), Silt Density Index (SDI) below 3, and supplying water to atmosphere. Productivity will vary depending on the actual feed water quality and temperature.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



# The Culligan® E2 Series Reverse Osmosis System



E2-3 Plus shown

### EXAMPLES OF MARKETS SERVED:

- |                           |                    |
|---------------------------|--------------------|
| AGRICULTURE               | LAUNDRY            |
| ASSISTED LIVING           | MANUFACTURING      |
| AUTOMOTIVE                | MARINE             |
| BIO-PHARMACEUTICAL        | MILITARY           |
| BOTANICALS                | MULTI-UNIT HOUSING |
| BOTTLED WATER PLANTS      | MUNICIPALITIES     |
| CASINOS                   | PLATING/COATING    |
| CHEMICAL PROCESSING       | PRINTING           |
| COMMERCIAL BUILDINGS      | PULP/PAPER         |
| DAIRIES                   | OIL/PETROLEUM/GAS  |
| EDUCATIONAL FACILITIES    | TEXTILE            |
| ENERGY/POWER/COGENERATION | THEME PARKS        |
| ELECTRONICS               | UNIVERSITIES       |
| GOVERNMENT                | VEHICLE WASH       |
| GROCERY                   |                    |
| FOOD/BEVERAGE             |                    |
| HEALTH CLUBS              |                    |
| HOTELS/LODGING            |                    |
| HOSPITALS/HEALTHCARE      |                    |
| INK/DYE PRODUCTION        |                    |
| LABORATORIES              |                    |

## Effective water treatment that is easy to manage.

The E2 Reverse Osmosis System is an economical water treatment solution, which reduces operating and post treatment costs. The E2 Reverse Osmosis system helps you reduce maintenance costs by reducing contaminants\* from your water that affect taste and clog equipment. Control your installation costs by using a system configured for your unique needs. Keep your operating costs low with an easy-to-use electronic controller.

The E2 RO is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Consult with a Culligan representative to create your solution.

\*contaminants may not necessarily be in your water

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Culligan CP+ Controller



Pre-Treatment Solutions



Membrane Solutions



Deionization Solutions



Storage Solutions



Distribution Solutions

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	20-50 psig	1.4 – 3.5 bar
Maximum Operating Pressure	120–150 psig	8.2 – 10.3 bar
Power Voltage Frequency Phase	208-230 60 Hz 1	
Feed Water Temperature	33–100° F	1-40° C
Turbidity, maximum	< 1 NTU	< 1 NTU
pH Range	3 – 11	3 – 11
Chlorine, max.: 0 mg/L	0 mg/l	0 mg/l
Total Dissolved Solids, maximum	2500 mg/l	2500 mg/l
Silt Density Index Well Water Surface Water	< 3 < 5	< 3 < 5
Iron, maximum	< 0.1 mg/l	< 0.1 mg/l
Salt Rejection, nominal	> 98 %	> 98 %
Product Water Hardness	< 1% Raw Hardness	< 1% Raw Hardness

## Examples of RO Applications

- Ice Production/Drinking Water—Reduces scaling, improves taste and clarity
- Steam Production—Reduces scaling and maintenance
- Humidification—Reduces scaling and dusting
- Misting—Reduces scaling and helps extend equipment life
- Pretreatment for High Purity Systems—Reduces regeneration requirements
- Reclaim/Recycling—Water conservation
- Boiler and Cooling Towers—Improves energy, reduces chemical consumption
- Washing and Rinsing—Improves performance, spot-free rinses
- Brackish water potabilization

## Standard Features

- Painted Steel Frame Design
- Energy Efficient Multi-stage Stainless Steel Pump
- FRP Membrane Housings
- Inlet Solenoid Valve
- Pretreatment Sediment Filter
- Concentrate and Recirculation Throttling Valves
- Pressure Gauge
- Rotameter Style Flow Meters
- Culligan CP+ Controller
  - Low Pressure Switch and Auto Restart
  - Connection for Pretreatment Signal Switch and Level Control
  - Startup Flush/Timed Flush
  - Indicator Status Lights

## Optional Features & Accessories

- Multi-Stage Pretreatment Filters
- Storage Tanks
- Level Controls
- Chemical Feed Pumps
- Ultraviolet Sterilization
- Pressurized Storage System
- Global Power Platforms
- Additional Customization Available on Request
- Auto Shut Down on High Product TDS

## Series E2 Reverse Osmosis System

Model	Nominal Capacity <sup>1</sup> (gpm/LPM)	Nominal Capacity <sup>1</sup> (gpd/L/day)	Module Qty & Size (in.)	Approx. Recovery (%)	Motor (HP/KW)	Power Req'd (VAC)	Dimensions L x W x H (inches/millimeters)
E2-2	2.8	4000	(2), 4"x40"	50	1	230V/60/1	26 x 29 x 53
	10.6	15140			0.75		660 x 737 x 1346
E2-3	4	5800	(3), 4"x40"	60	1	230V/60/1	26 x 29 x 53
	15.14	21953			0.75		660 x 737 x 1346
E2-4	5.2	7500	(4), 4"x40"	60	1	230V/60/1	26 x 29 x 53
	19.68	28388			0.75		660 x 737 x 1346
E2-5	6.3	9000	(5), 4"x40"	75	1	230V/60/1	26 x 29 x 53
	23.85	34065			0.75		660 x 737 x 1346
E2-6	6.9	10000	(6), 4"x40"	75	1	230V/60/1	26 x 29 x 53
	26.12	37850			0.75		660 x 737 x 1346

<sup>1</sup>Nominal initial capacity based on properly pretreated feed water of 500 ppm TDS, temperature of 77° F (25° C), Silt Density Index below 3.0 and an applied pressure of 140 psi. Productivity will vary depending on other feed water conditions.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

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# The Culligan® M2 Series Reverse Osmosis System



## Excellent water quality is a smart business decision.

Culligan makes it simple to manage your water for drinking and industrial processes. The M2 Reverse Osmosis system is a flexible, expandable configuration customized to help meet your most demanding and exacting consumption needs. Manage the reverse osmosis system using an easy-to-reach electronic controller that automates when to get the quantity and quality of water based on your specific requirements.

The M2 RO is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Consult with a Culligan representative to create your solution.

### EXAMPLES OF MARKETS SERVED:

- |                           |                    |
|---------------------------|--------------------|
| AGRICULTURE               | LAUNDRY            |
| ASSISTED LIVING           | MANUFACTURING      |
| AUTOMOTIVE                | MARINE             |
| BIO-PHARMACEUTICAL        | MILITARY           |
| BOTANICALS                | MULTI-UNIT HOUSING |
| BOTTLED WATER PLANTS      | MUNICIPALITIES     |
| CASINOS                   | PLATING/COATING    |
| CHEMICAL PROCESSING       | PRINTING           |
| COMMERCIAL BUILDINGS      | PULP/PAPER         |
| DAIRIES                   | OIL/PETROLEUM/GAS  |
| EDUCATIONAL FACILITIES    | TEXTILE            |
| ENERGY/POWER/COGENERATION | THEME PARKS        |
| ELECTRONICS               | UNIVERSITIES       |
| GOVERNMENT                | VEHICLE WASH       |
| GROCERY                   |                    |
| FOOD/BEVERAGE             |                    |
| HEALTH CLUBS              |                    |
| HOTELS/LODGING            |                    |
| HOSPITALS/HEALTHCARE      |                    |
| INK/DYE PRODUCTION        |                    |
| LABORATORIES              |                    |

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



Pre-Treatment Solutions



Membrane Solutions



Deionization Solutions



Storage Solutions



Distribution Solutions

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	20-50 psig	1.4 – 3.5 bar
Maximum Operating Pressure	120–150 psig	8.2 – 10.3 bar
Power Voltage Frequency Phase	208-230 60 Hz 1	
Feed Water Temperature	33–100° F	1-40° C
Turbidity, maximum	< 1 NTU	< 1 NTU
pH Range	3 – 11	3 – 11
Chlorine, max.: 0 mg/L	0 mg/l	0 mg/l
Total Dissolved Solids, maximum	2500 mg/l	2500 mg/l
Silt Density Index Well Water Surface Water	< 3 < 5	< 3 < 5
Iron, maximum	< 0.1 mg/l	< 0.1 mg/l
Salt Rejection, nominal	> 98 %	> 98 %
Product Water Hardness	< 1% Raw Hardness	< 1% Raw Hardness

## Examples of RO Applications

- Ice Production/Drinking Water—Reduces scaling, improves taste and clarity
- Steam Production—Reduces scaling and maintenance
- Humidification—Reduces scaling and dusting
- Misting—Reduces scaling and helps extend equipment life
- Pretreatment for High Purity Systems—Reduces regeneration requirements
- Reclaim/Recycling—Water conservation
- Boiler and Cooling Towers—Improves energy, reduces chemical consumption
- Washing and Rinsing—Improves performance, spot-free rinses
- Brackish water potabilization

## Standard Features

- Painted Steel Frame Design
- Energy Efficient Multi-stage Stainless Steel Pump
- FRP Membrane Housings
- Inlet Solenoid Valve
- Pretreatment Sediment Filter
- Concentrate and Recirculation Throttling Valves
- Pressure Gauges
- Electronic Turbine Style Flow Meters
- Culligan Electronic Control Panel
- Telemetric Capability
- Comprehensive System Monitoring
- Lighted Alphanumeric Display
- TDS Monitoring of Water Quality and Rejection
- Low Pressure Switch and Auto Restart
- Connection for Pretreatment Signal Switch and Level Control
- Elapsed run time monitor
- Visual Alarms
- Remote Alarm Output Connection
- System Flow Rate Monitoring
- User Selectable Flush Options

## Optional Features & Accessories

- Multi-Stage Pretreatment Filters
- Wireless Remote Digital Display
- Leak Sensor
- RS232, RS485 Output
- Storage Tanks
- Level Controls
- Chemical Feed Pumps
- Ultraviolet Sterilization
- Pressurized Storage System
- Global Power Platforms
- Additional Customization Available on Request

## Series M2 Reverse Osmosis System

Model	Nominal Capacity <sup>1</sup> (gpm/ LPM)	Nominal Capacity <sup>1</sup> (gpd/ L/day)	Module Qty & Size (in.)	Approx. Recovery (%)	Motor (HP/KW)	Power Req'd <sup>2</sup> (VAC)	Dimensions L x W x H (inches/millimeters)
M2-2	2.8	4000	(2), 4"x40"	50	1	230V/60/1	26 x 29 x 53
	10.6	15140			0.75		660 x 737 x 1346
M2-3	4	5800	(3), 4"x40"	60	1	230V/60/1	26 x 29 x 53
	15.14	21953			0.75		660 x 737 x 1346
M2-4	5.2	7500	(4), 4"x40"	60	1	230V/60/1	26 x 29 x 53
	19.68	28388			0.75		660 x 737 x 1346
M2-5	6.3	9000	(5), 4"x40"	75	1	230V/60/1	26 x 29 x 53
	23.85	34065			0.75		660 x 737 x 1346
M2-6	6.9	10000	(6), 4"x40"	75	1	230V/60/1	26 x 29 x 53
	26.12	37850			0.75		660 x 737 x 1346

<sup>1</sup>Nominal initial capacity based on properly pretreated feed water of 500 ppm TDS, temperature of 77° F (25° C), Silt Density Index below 3.0 and an applied pressure of 140 psi. Productivity will vary depending on other feed water conditions.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



# The Culligan® G2 Series Reverse Osmosis System



## Effective water treatment that is easy to manage.

Culligan makes it simple to manage your water for drinking and industrial processes. The G2 Reverse Osmosis system is a flexible, expandable configuration customized to help meet your most demanding and exacting consumption needs. Manage the reverse osmosis system using an easy-to-reach electronic controller that automates when to get the quantity and quality of water based on your specific requirements.

The G2 RO is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Consult with a Culligan representative to create your solution.

### EXAMPLES OF MARKETS SERVED:

- |                           |                    |
|---------------------------|--------------------|
| AGRICULTURE               | LAUNDRY            |
| ASSISTED LIVING           | MANUFACTURING      |
| AUTOMOTIVE                | MARINE             |
| BIO-PHARMACEUTICAL        | MILITARY           |
| BOTANICALS                | MULTI-UNIT HOUSING |
| BOTTLED WATER PLANTS      | MUNICIPALITIES     |
| CASINOS                   | PLATING/COATING    |
| CHEMICAL PROCESSING       | PRINTING           |
| COMMERCIAL BUILDINGS      | PULP/PAPER         |
| DAIRIES                   | OIL/PETROLEUM/GAS  |
| EDUCATIONAL FACILITIES    | TEXTILE            |
| ENERGY/POWER/COGENERATION | THEME PARKS        |
| ELECTRONICS               | UNIVERSITIES       |
| GOVERNMENT                | VEHICLE WASH       |
| GROCERY                   |                    |
| FOOD/BEVERAGE             |                    |
| HEALTH CLUBS              |                    |
| HOTELS/LODGING            |                    |
| HOSPITALS/HEALTHCARE      |                    |
| INK/DYE PRODUCTION        |                    |
| LABORATORIES              |                    |

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Choice of High Efficiency or High Production Design
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



Pre-Treatment Solutions



**Membrane Solutions**



Deionization Solutions



Storage Solutions



Distribution Solutions

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	20-50 psig	1.4 – 3.5 bar
Maximum Operating Pressure	150–200 psig	10.3 – 13.8 bar
Power Voltage Frequency Phase	208-230-460 60 Hz 3	380-415 50 Hz 3
Feed Water Temperature	33–100° F	1-40° C
Turbidity, maximum	< 1 NTU	< 1 NTU
pH Range	3 – 11	3 – 11
Chlorine, max.: 0 mg/L	0 mg/l	0 mg/l
Total Dissolved Solids, maximum	2500 mg/l	2500 mg/l
Silt Density Index Well Water Surface Water	< 3 < 5	< 3 < 5
Iron, maximum	< 0.1 mg/l	< 0.1 mg/l
Salt Rejection, nominal	> 98 %	> 98 %
Product Water Hardness	< 1% Raw Hardness	< 1% Raw Hardness

## Examples of RO Applications

- Ice Production/Drinking Water— Reduces scaling, improves taste and clarity
- Steam Production— Reduces scaling and maintenance
- Humidification— Reduces scaling and dusting
- Misting— Reduces scaling and helps extend equipment life
- Pretreatment for High Purity Systems— Reduces regeneration requirements
- Reclaim/Recycling— Water conservation
- Boiler and Cooling Towers— Improves energy, reduces chemical consumption
- Washing and Rinsing— Improves performance, spot-free rinses
- Brackish water potabilization

## Standard Features

- Painted Steel Frame Design
- Energy Efficient Multi-stage Stainless Steel Pump
- FRP Membrane Housings
- Inlet Solenoid Valve
- Pretreatment Sediment Filter
- Concentrate and Recirculation Throttling Valves
- Pressure Gauges
- Electronic Turbine Style Flow Meters
- Stainless Steel Pump Throttling Valve (Plus Models)
- Product Flush Solenoid Valve (Plus Models)
- Electronic Pressure Transducers (Plus Models)
- Stainless Steel Concentrate and Recirculation Valves (Plus Models)
- Culligan Electronic Control Panel
- Telemetric Capability
- Comprehensive System Monitoring
- Lighted Alphanumeric Display
- TDS Monitoring of Water Quality and Rejection
- Low Pressure Switch and Auto Restart
- Connection for Pretreatment Signal Switch and Level Control
- Elapsed run time monitor
- Visual Alarms
- Remote Alarm Output Connection
- System Flow Rate Monitoring
- User Selectable Flush Options

## Optional Features & Accessories

- Multi-Stage Pretreatment Filters
- Stainless Steel Frame Design
- Polypropylene, PVDF or SS Plumbing
- Wireless Remote Digital Display
- Leak Sensor
- RS232, RS485 Output
- PLC Controller
- Storage Tanks
- Level Controls
- Distribution Pump Skids
- Post Treatment Polishing Skids
- Chemical Feed Pumps
- Ultraviolet Sterilization
- Pressurized Storage System
- Global Power Platforms
- Additional Customization
- Available on Request

## G2 Reverse Osmosis System - High Efficiency

Model	Nominal Capacity* (gpm / lpm)	Nominal Capacity* (gpd / m <sup>3</sup> /h)	Module Qty & Size	Approx. System Recovery (%)	Motor (HP/KW)	Electric Power Required (VAC)	Dimension L x W x H (inches/millimeters)
G2 - 2HE	2.78	4000	(2), 4"x40"	50	2	208 - 230/3/60	22 x 31 x 56
	10.52	0.63			1.49	380 - 415/3/50	560 x 787 x 1425
G2 - 3HE	4.03	5000	(3), 4"x40"	60	2	208 - 230/3/60	22 x 31 x 56
	15.25	0.91			1.49	380 - 415/3/50	560 x 787 x 1425
G2 - 4HE	5.21	7500	(4), 4"x40"	60	2	208 - 230/3/60	22 x 31 x 56
	19.72	1.18			1.49	380 - 415/3/50	560 x 787 x 1425
G2 - 5HE	6.25	9000	(5), 4"x40"	75	2	208 - 230/3/60	22 x 31 x 56
	23.66	1.42			1.49	380 - 415/3/50	560 x 787 x 1425
G2 - 6HE	6.94	10000	(6), 4"x40"	75	2	208 - 230/3/60	22 x 31 x 56
	26.29	1.58			1.49	380 - 415/3/50	560 x 787 x 1425
G2 - 7HE	9.2	13250	(7), 4"x40"	75	3	208 - 230/3/60	30.5 x 31 x 56
	34.83	2.09			2.24	380 - 415/3/50	775 x 787 x 1425
G2 - 8HE	10.42	15000	(8), 4"x40"	75	3	208 - 230/3/60	30.5 x 31 x 56
	39.43	2.37			2.24	380 - 415/3/50	775 x 787 x 1425
G2 - 9HE	11.98	17250	(9), 4"x40"	75	3	208 - 230/3/60	30.5 x 31 x 56
	45.35	2.72			2.24	380 - 415/3/50	775 x 787 x 1425
G2 - 10HE	13.19	19000	(10), 4"x40"	75	3	208 - 230/3/60	30.5 x 31 x 56
	49.95	3			2.24	380 - 415/3/50	775 x 787 x 1425

\* Nominal capacity based on new RO membranes operating on a properly pretreated feed water of 500 ppm TDS as NaCl, 77 °F (25 °C), Silt Density Index (SDI) below 3, and supplying water to atmosphere. Productivity will vary depending on the actual feed water quality and temperature.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 75 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.





# The Culligan® G3 Series Reverse Osmosis System



\*Shown with optional equipment

## No limits for water quality at any quantity.

No limits for your water quality regardless of quantity—the Culligan G3 Reverse Osmosis system processes water to help meet your most demanding and exacting industrial requirements. The durable reverse osmosis membrane processes large volumes while reducing water waste; you can manage the system using a touch panel electronic controller. Better quality water improves industrial processes by reducing contaminants\* that corrode and clog equipment, so your investment in the Culligan G3 RO benefits your operations for years to come.

The G3 RO is part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Consult with a Culligan representative to create your solution.

\*contaminants may not necessarily be in your water

### EXAMPLES OF MARKETS SERVED:

- |                        |                    |
|------------------------|--------------------|
| AGRICULTURE            | LABORATORIES       |
| ASSISTED LIVING        | LAUNDRY            |
| AUTOMOTIVE             | MANUFACTURING      |
| BIO-PHARMACEUTICAL     | MARINE             |
| BOTANICALS             | MILITARY           |
| BOTTLED WATER PLANTS   | MULTI-UNIT HOUSING |
| CASINOS                | MUNICIPALITIES     |
| CHEMICAL PROCESSING    | PLATING/COATING    |
| COMMERCIAL BUILDINGS   | PRINTING           |
| DAIRIES                | PULP/PAPER         |
| EDUCATIONAL FACILITIES | OIL/PETROLEUM/GAS  |
| ENERGY/POWER/          | TEXTILE            |
| COGENERATION           | THEME PARKS        |
| ELECTRONICS            | UNIVERSITIES       |
| GOVERNMENT             | VEHICLE WASH       |
| GROCERY                |                    |
| FOOD/BEVERAGE          |                    |
| HEALTH CLUBS           |                    |
| HOTELS/LODGING         |                    |
| HOSPITALS/HEALTHCARE   |                    |
| INK/DYE PRODUCTION     |                    |

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Remote Monitoring Options
  - Telemetry Options



Pre-Treatment Solutions



**Membrane Solutions**



Deionization Solutions



Storage Solutions



Distribution Solutions

## System Specifications

Specification	US	Metric
Inlet Pressure (dynamic)	20-50 psig	1.4 – 3.5 bar
Maximum Operating Pressure	195–220 psig	13.4 – 15 bar
Power Voltage Frequency Phase	208-230-460 60 Hz 3	380-415 50 Hz 3
Feed Water Temperature	33–100° F	1-40° C
Turbidity, maximum	< 1 NTU	< 1 NTU
pH Range	3 – 11	3 – 11
Chlorine, max.: 0 mg/L	0 mg/l	0 mg/l
Total Dissolved Solids, maximum	2500 mg/l	2500 mg/l
Silt Density Index Well Water Surface Water	< 3 < 5	< 3 < 5
Iron, maximum	< 0.1 mg/l	< 0.1 mg/l
Salt Rejection, nominal	> 98 %	> 98 %
Product Water Hardness	< 1% Raw Hardness	< 1% Raw Hardness

## Examples of RO Applications

- ✓ Steam Production—Reduces scaling and maintenance
- ✓ Humidification—Reduces scaling and dusting
- ✓ Pretreatment for High Purity Systems—Reduces regeneration requirements

- ✓ Reclaim/Recycling—Water conservation
- ✓ Boiler and Cooling Towers—Improves energy, reduces chemical consumption
- ✓ Washing and Rinsing—Improves performance, spot-free rinses
- ✓ Bio-Pharmaceutical—High Quality Water

- ✓ Heavy Industrial Manufacturing
- ✓ Power Generation/Co-Generation
- ✓ High Purity Ingredient Mixing
- ✓ Beverage and Fluid Mixing
- ✓ Cooling Tower Reuse

## Standard Features

- ✓ Painted Steel Skid Design
- ✓ Energy Efficient Multi-stage Stainless Steel Pump
- ✓ Stainless Steel Pump Throttling Valve
- ✓ FRP Membrane Housings
- ✓ Inlet Solenoid Valve
- ✓ Pretreatment Sediment Filter
- ✓ Concentrate and Recirculation Throttling Valves

- ✓ Product Flush Solenoid Valve
- ✓ Electronic Pressure Transducers
- ✓ Electronic Flow Meters
- ✓ Culligan Electronic Control Panel (PLC)
- ✓ Comprehensive System Monitoring
- ✓ Lighted Alphanumeric Display
- ✓ TDS Monitoring of Water Quality and Rejection

- ✓ Low Pressure Switch and Auto Restart
- ✓ Connection for Pretreatment Signal Switch and Level Control
- ✓ Elapsed run time monitor
- ✓ Visual and/or Audible Alarms
- ✓ Remote Alarm Output Connection
- ✓ System Flow Rate Monitoring
- ✓ User Selectable Flush Options

## Optional Features & Accessories

- ✓ Variable Frequency Drive (VFD)
- ✓ High Pressure Pumps and Membrane Housings as Required by the Application
- ✓ Multi-Stage Pretreatment Filters
- ✓ Polypropylene, PVDF or SS Plumbing
- ✓ Wireless Remote Digital Display

- ✓ Leak Sensor
- ✓ RS232, RS485 Output
- ✓ Storage Tanks
- ✓ Level Controls
- ✓ Distribution Pump Skids
- ✓ Post Treatment Polishing Skids
- ✓ Telemetric Capability

- ✓ Chemical Feed Pumps
- ✓ Ultraviolet Sterilization
- ✓ Pressurized Storage System
- ✓ Custom Power Requirements
- ✓ Clean-in-place (CIP) System
- ✓ Additional Customization Available on Request

## G3 Reverse Osmosis System

Model	Nominal Capacity* (gpm / lpm)	Nominal Capacity* (gpd / m <sup>3</sup> /hr)	Module Qty & Size	Pressure Vessel Qty & Size	Nominal System Recovery (%)	Motor HP - KW	Electric Power Req'd (VAC)	Dimension L x W x H (inches — centimeters)
G3 - 222	16.7	24,000	(4), 8"x40"	(2), 8"x2L	75	7.5	460/3/60Hz	146 x 40 x 82
	63	3.8				5.6	380V/50/3	371 x 102 x 208
G3 - 232	25	36,000	(6), 8"x40"	(2) 8"x3L	75	10	460/3/60Hz	146 x 40 x 82
	95	5.7				7.46	380V/50/3	371 x 102 x 208
G3 - 333	35	50,400	(9), 8"x40"	(3), 8"x3L	75	15	460/3/60Hz	146 x 40 x 82
	132	7.9				11.19	380V/50/3	371 x 102 x 208
G3 - 433	50	72,000	(12), 8"x40"	(4), 8"x3L	75	20	460/3/60Hz	146 x 40 x 82
	189	11.4				14.92	380V/50/3	371 x 102 x 208
G3 - 533	62.5	90,000	(15), 8"x40"	(5), 8"x3L	75	25	460/3/60Hz	146 x 40 x 82
	237	14.2				18.65	380V/50/3	371 x 102 x 208
G3 - 543	84	120,960	(20), 8"x40"	(5), 8"x4L	75	30	460/3/60Hz	194 x 46 x 82
	318	19.1				22.38	380V/50/3	493 x 117 x 208
G3 - 643	100	144,000	(24), 8"x40"	(6), 8"x4L	75	40	460/3/60Hz	194 x 46 x 94
	379	22.7				29.84	380V/50/3	493 x 117 x 208
G3 - 943	150	216,000	(36), 8"x40"	(9), 8"x4L	75	50	460/3/60Hz	274 x 50 x 94
	568	34.1				37.3	380V/50/3	696 x 127 x 239
G3 - 1243	200	288,000	(48), 8"x40"	(12), 8"x4L	75	60	460/3/60Hz	274 x 70 x 90
	757	45.4				44.76	380V/50/3	696 x 178 x 229

\*Nominal capacity based on new RO membranes operating on a properly pretreated feed water of 2000 ppm TDS as NaCl, 77 °F (25 °C), Silt Density Index (SDI) below 3, and supplying water to atmosphere. Productivity will vary depending on the actual feed water quality and temperature.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

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# Deionization Products



Pre-Treatment  
Solutions



Membrane  
Solutions



Deionization  
Solutions



Storage  
Solutions



Distribution  
Solutions



**EXAMPLES OF MARKETS SERVED:**

- CLINICS
- EDUCATIONAL FACILITIES
- ENERGY & POWER
- FOOD & BEVERAGE PRODUCTION
- FOOD SERVICE/RESTAURANTS
- GROCERY
- HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL
- HOSPITALITY/LODGING
- MANUFACTURING
- MUNICIPAL DRINKING WATER
- OIL & GAS

**High Quality Water for  
 Specialized Applications**

Culligan Premier Deionizers are part of a multiple process treatment system that produces high quality water required for specialized applications. Premier deionizers use ion exchange to reduce unwanted contaminants.\* Choose from a flexible configuration of weak base or strong base resin tanks. You also have the option to automatically or manually control the regeneration process.

Culligan Premier Deionizers use fewer valves than competitors which helps improve reliability. A pumped regenerant system helps provide consistent regenerant usage.

Premier Series deionizers are part of the Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Consult with a Culligan representative to create your solution.

\*Contaminants may not necessarily be in your water.

**Culligan Matrix Solutions Advantages:**

- Simple System Integration
- Flexible Configurations
- Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognition
  - Remote monitoring options
  - Telemetry Options
  - Single or Duplex Options
  - Automatic or Manual Regeneration Initiation



Pre-Treatment  
 Solutions



Membrane  
 Solutions



Deionization  
 Solutions



Storage  
 Solutions



Distribution  
 Solutions

## Examples of DI Applications

- Manufacturing—Improved productivity for process, makeup and rinse
- Food and Beverage—Improved taste and clarity, consistent quality for fountain solution
- Ice Production—Improved clarity and reduced mineral build-up
- Glass/Mirrors—Rinsing to improve quality and product yield
- Boilers/Humidification—Reduced scaling, improved energy efficiency
- Plating—Spot-free rinse
- Printing—Low sodium

## System Specifications

Specification	US	Metric
Inlet Water Pressure (dynamic)	50-60 psig	345-414 kPa
Air Pressure	85 psi Min. 8-10 scfm	586.5 kPa 13.6-17 sm <sup>3</sup> /hr
Power Voltage, Frequency, Phase	120 VAC 60 HZ 1 Ph	
Feed Water Temperature	45-100°F	7-38°C

## Standard Features

- Two Bed Strong Base and Two Bed Weak Base Systems are available.
- All Plastic Construction — Filament wound epoxy coated fiberglass tanks to retain good appearance in harsh environments. Schedule 80 PVC plumbing and glass-filled thermoplastic valves resist corrosion.
- Culligan's Smart Controller — More control over your equipment with programming and monitoring capabilities typically found in more expensive PLC controls. A variety of add-on options for advanced instrumentation and communication let you easily customize the system to help meet your needs.
- Quality Rinse Prior to Regeneration — The purge valve (rinse valve) opens for a fast flush when the product water TDS (Total Dissolved Solids) exceeds a desired set-point. If the desired quality is achieved, the unit will return to service. If the desired quality is not achieved the unit will be regenerated.
- Auxiliary Outputs — Allow you to control the discharge to the neutralization system.

## Optional Features and Accessories

- Recirculation System
- Flow Measuring Devices — are available for direct connection to the Culligan Smart Controller for volume based regeneration initiation
- Duplex Alternating Systems
- Vacuum Breakers
- Caustic Drum Heater
- System Telemetry
- RS232, RS485, Modbus PLC Output

## Premier Series Automatic Deionizer

Single Tank Models	Capacity <sup>1,2</sup> Strong Base gr g	Capacity <sup>1,2</sup> Weak Base gr g	Service Flow Rates		Pipe Size in. in.	Tank Size in mm	Resin Qty Strong Base		Resin Qty Weak Base	
			Min. Flow @ ΔP	Max. Flow @ ΔP			Cation	Anion	Cation	Anion
			gpm @ psi	gpm @ psi			ft <sup>3</sup>	ft <sup>3</sup>	ft <sup>3</sup>	ft <sup>3</sup>
QS/QW-21	100,000	126,000	4.4 @ 3	20 @ 23	1.5	21 x 62	5	6	6	5
	6,480	8,165	17.1 @ 20.7	78 @ 159	1.5	533 x 1,575	141.6	169.9	169.9	141.6
QS/QW-24	180,000	189,000	6.3 @ 4	30 @ 15	2	24 x 72	9	9	9	8
	11,664	12,247	24.4 @ 27.6	116 @ 103	2	610 x 1,829	254.9	254.9	254.9	226.6
QS/QW-30	280,000	315,000	9.8 @ 4	50 @ 22	2	30 x 72	14	15	15	13
	18,144	20,412	38 @ 27.6	194 @ 152	2	762 x 1,829	396.5	424.8	424.8	368.2
QS/QW-36	420,000	462,000	14.2 @ 4	70 @ 22	2	36 x 72	21	22	22	19
	27,216	29,938	55 @ 27.6	271 @ 152	2	914 x 1,829	594.7	623	623	538.1
QS/QW-42	520,000	609,000	19.2 @ 2	100 @ 17	3	42 x 72	26	29	29	24
	33,696	39,463	74.4 @ 13.8	388 @ 117	3	1,067 x 1,829	736.3	821.3	821.3	679.7
QS/QW-48	720,000	819,000	25.1 @ 2	125 @ 21	3	48 x 72	36	39	39	34
	46,656	53,071	97.3 @ 13.8	484 @ 145	3	1,219 x 1,829	1019.5	1104.5	1104.5	962.9

<sup>1</sup> Capacities based on treating water containing 10 grains per gallon (171 mg/l) total dissolved solids (expressed as calcium carbonate), consisting of 25% sodium, 50% alkalinity, 77° F (25° C), and free of color, oil, turbidity and organics. These are nominal capacities and will vary with influent water characteristics, water temperature and other factors.

<sup>2</sup> Capacities based on regenerating cation resin at 6 lb per ft<sup>3</sup> (96 kg/m<sup>3</sup>) as 100% HCl and strong base anion resin with 6 lb per ft<sup>3</sup> (96 kg/m<sup>3</sup>) as 100% NaOH.

<sup>3</sup> Flow rates less than minimum require an optional recirculation pump system to maintain water quality.

NOTE: Operational, maintenance and replacement requirements are essential for this product to perform as advertised. Specifications shown are for single models. Also available in multiple tank configurations.

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**EXAMPLES OF MARKETS SERVED:**

- CLINICS
- EDUCATIONAL FACILITIES
- ENERGY & POWER
- FOOD & BEVERAGE PRODUCTION
- FOOD SERVICE/RESTAURANTS
- GROCERY
- HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL
- HOSPITALITY/LODGING
- MANUFACTURING
- MUNICIPAL DRINKING WATER
- OIL & GAS

**Convenient High Quality Water Without  
 Maintenance Hassles**

Culligan Portable Exchange deionizers (PEDI) are part of a multiple-process treatment system that produces high-quality water required for specialized applications. PEDI systems reduce both positively and negatively charged ions from water by means of ion exchange resins. We also offer portable exchange softening (PES) systems, which deliver a constant supply of soft water to small and large operations, without a capital investment. When your PEDI tanks are exhausted, a Culligan service technician replaces your ion exchange tanks at your convenience. This system reduces on-site labor and regenerant chemical handling.

Culligan PEDI Systems are part of Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs. Contact Culligan today to learn more about PEDI systems.

**Culligan Matrix Solutions Advantages:**

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery / Easy Installation
- Simple, Easy and Exclusive Culligan Advanced Electronics for monitoring with the Culligan Smart Controller
  - Historical Operating Data
  - Alarm Recognitions
  - Telemetry Options



Pre-Treatment  
 Solutions



Membrane  
 Solutions



Deionization  
 Solutions



Storage  
 Solutions



Distribution  
 Solutions

# Culligan Portable Exchange Deionization System Advantages:

- **No Capital Investment**

You rent instead of buy and conserve your capital. Rental fees are part of your operating costs, spread out over the time you use the service. Rental charges can be arranged to suit your needs - per tank, per gallon, or per regeneration.

- **Reduce Labor and Maintenance Costs**

There is no equipment to operate, repair and no equipment downtime. Your local Culligan dealer owns and maintains the equipment. System regenerations are handled by your local Culligan dealer. Your personnel do not need to handle regenerant chemicals and you do not have to dispose of any waste.

- **Culligan Global Network - Global Scope, Local Service and Knowledge**

With over 800 plus dealers and international licensees in over 90 countries, our sales representatives and service technicians are familiar with the local water conditions and discharge requirements.

- **An End-to-End Solution from a Single Source**

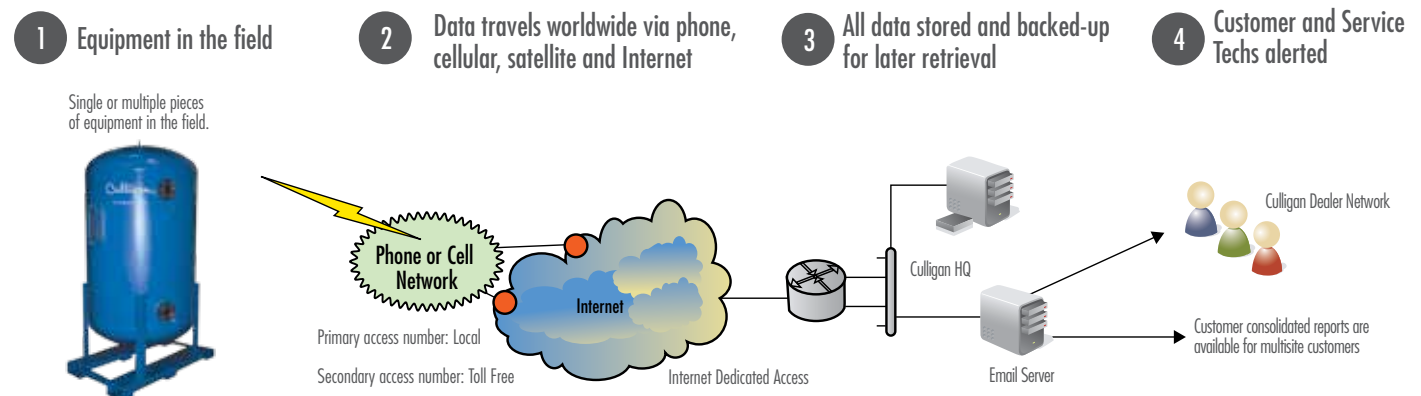
Our discovery process identifies your individual business requirements and then creates a modular water treatment system that is customized to meet those needs.

- **Advanced Monitoring and Control Capabilities with the Culligan Smart Controller**

The Culligan exclusive Smart Controller monitors and controls every facet of the PEDI system including:

- Current Flow Rate
- Daily Usage Volume
- Average Daily Usage
- Total Gallons Since New
- External Filter Capacity
- Monitor TDS Alarm and Tank Switch Over (PEDI Bank Switcher)

A key feature of the system is the telemetry option which allows you to connect the water treatment system via a telephone line to Culligan. The feature also allows us to monitor your system centrally and service your system locally all over the world.



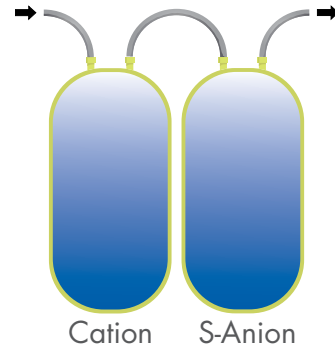
# High Purity Water System – From a Single Tank to a Complete Solution.

Culligan PEDI high purity water systems are available in several system configurations. Your system is customized (size, capacity, type of system, options, etc.) to help meet your water quality and quantity needs.

## Two-Bed PEDI System

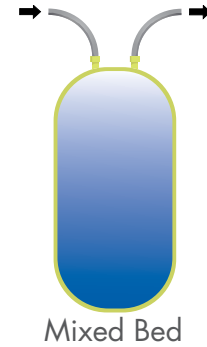
The cation and anion exchangers are connected in series.

The cation tank reduces positively charged ions (calcium, sodium, magnesium, iron, manganese and potassium). The anion tank reduces negatively charged ions (sulfates, chlorides, carbonates, bicarbonates, nitrates and silica). Strong base anion units typically produce 0.2 megohm water at a pH of 8-9, whereas weak base anion units produce lower water quality, at a pH of 6-7, and do not remove silica or CO<sub>2</sub>.



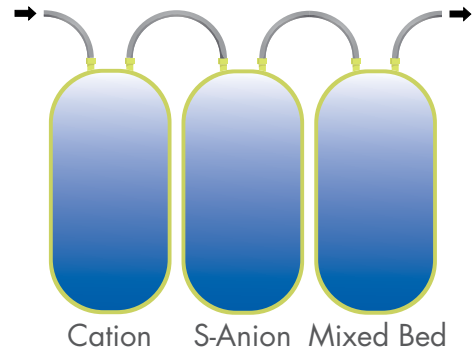
## Mixed-Bed PEDI System

Cation and anion resins are combined and mixed in a single tank. With a Mixed-Bed PEDI system, typical water quality of 2 mega-ohm or more with neutral pH can be achieved.



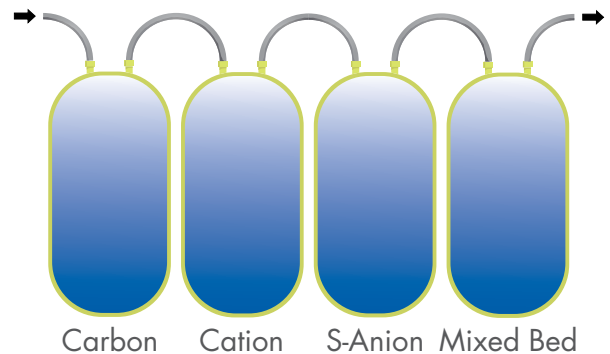
## Multiple-Tank PEDI Systems

Three tanks or more are connected in series; or parallel; or a combination of the two. Systems may consist of strong acid cation, strong or weak base anion and mixed bed media tanks in a number of varying combinations, to produce the water quality and quantity required. Water qualities of 15 mega-ohm or more, with a neutral pH, can be attained.



## Complete Multiple-Process Treatment Systems

Exchange service tanks using other water treatment modules from Culligan Matrix Solutions create an end-to-end high purity water treatment system. A typical system may include one or more of the following modules: softeners, multi-media depth filters, carbon filters, disinfection, submicron filters, or other treatment equipment.





## Global Expertise with Customized Local Service



### Over 800 Culligan Dealers in more than 90 countries

Algeria	Croatia	Guatemala	Kenya	Norway	Singapore	Thailand
Angola	Cyprus	Guine Bissau	Korea	Oman	Slovak Republic	Trinidad
Argentina	Czech Republic	Haiti	Kuwait	Pakistan	Slovenia	Tunisia
Australia	Dubai	Honduras	Laos	Panama	South Africa	Turkey
Austria	Ecuador	Hong Kong	Laticia	Peru	Spain	Turkish Republic of Northern Cyprus
Bahamas	Egypt	Hungary	Lebanon	Philippines	Sri Lanka	UK
Belgium	El Salvador	Indonesia	Lithuania	Poland	St. Maarten NA	Ukraine
Belize	Estonia	Ireland	Malta	Portugal	St. Thomas	USA
Bermuda	Finland	Israel	Mexico	Puerto Rico	Sweden	Venezuela
Cambodia	France	Italy	Morocco	Qatar	Switzerland	Vietnam
Canada	Germany	Jamaica	Mozambique	Romania	Tahiti	
China	Greece	Japan	New Zealand	Saudi Arabia	Taiwan	
Costa Rica	Guam	Jordan	Nigeria	Serbia	Tanzania	

Finally, an end-to-end solution from a single source.



### Place your industrial and commercial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



# Controllers



Pre-Treatment  
Solutions



Membrane  
Solutions



Deionization  
Solutions



Storage  
Solutions



Distribution  
Solutions



## The Culligan Industrial Smart Controller



### Reduce Risk and Accelerate Your ROI with the Culligan Smart Controller

For companies using water treatment in their production processes consistency of water quality can reduce process downtime and business risk. Culligan's exclusive advanced electronic capabilities enables companies to operate at improved efficiency and continuously provide high quality water. With the cost effective Smart Controller, which comprises of multiple sensors, our customers can monitor their water treatment equipment performance and maintenance needs, at a single site or across multiple ones 24 hours a day. This may help avert system failure, reduce potential production delays and decrease overall operating costs through predictability of maintenance needed.

Control your Culligan Matrix Solutions™ equipment with a totally integrated Culligan Smart Controller.



Pre-Treatment Solutions



Membrane Solutions



Deionization Solutions



Storage Solutions



Distribution Solutions

## Exclusive Culligan Smart Controller Advanced Electronics Include:

- **Historical Operating Data**

Starting at the time of installation, system operating data is stored and can be accessed to monitor trends over time.

- **Alarm Recognitions**

The Culligan Smart Controller allows you to monitor and set lower and upper limits on a number of system parameters. As a result you can respond quickly to system variations and promote consistent water quality.

- **Wireless Remote Monitoring Options**

If the water treatment equipment is in a location that is difficult to access or far from a manager's office, you can use the remote display to monitor the system, up to 200 ft away from the installation.

- **SCADA / Control Room PLC Interface**

The Culligan Smart Controller can operate as a remote terminal unit (RTU) and can be monitored directly by the Customer's control room SCADA system. Connections are available into RS232, RS485, USB and Modbus communication networks.

- **Telemetry Options**

With telemetry options, you can connect your Matrix water treatment system via landline or cellular phone to Culligan. This exclusive feature allows us to monitor your system centrally and service your system locally.

- **US Standard and Metric Readings**

With an easy to program key pad and display, you can program and view your system parameters in either US Standard or Metric units.

## Culligan Smart Controller Supports Culligan Exclusive Features:

- **Aqua-Sensor®**

Culligan's patented digital Aqua-Sensor® for water softeners adjusts to influent water conditions (i.e. water quality, pressure, flow rate etc.) and signals the need for regeneration based on resin bed exhaustion. It also controls the duration of the brine rinse cycle. As a result, you may realize significant salt and water savings which lead to reduced operating costs and accelerated return on investment (ROI).

- **Brine Reclaim**

Culligan's brine reclaim feature for water softeners can help reduce salt consumption up to 25% or more and reduce discharge to drain leading to additional operating efficiencies. This feature allows Culligan to design a solution around your overall water management/wastewater minimization needs and sustainability goals.

- **Progressive Flow**

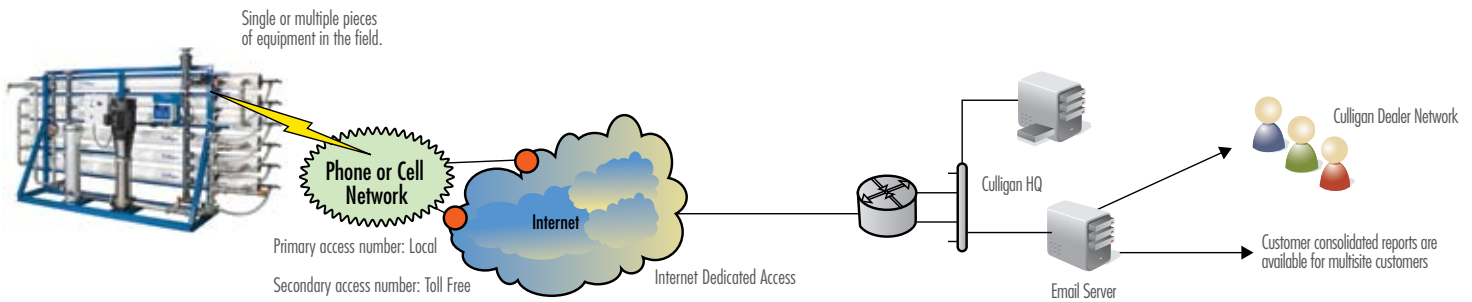
With Culligan's patented progressive flow feature, you can size softeners and filters based on average water usage, which helps reduce capital costs. The feature is best suited for applications requiring intermittent/periodic high flow rates. The Culligan Smart Controller monitors water demand and brings additional tanks online or offline as the flow demand changes.

# 1 Equipment in the field

# 2 Data travels worldwide via phone, cellular, satellite and Internet

# 3 All data stored and backed-up for later retrieval

# 4 Customer and Service Techs alerted



## A Customized Communication Level Based on Your Monitoring Needs.

### Service Level 1

- The water treatment system calls the Culligan Server once per day.\*
- If there is an error, a consolidated report is e-mailed to the Culligan dealership the next morning.

\* Available only on Reverse Osmosis, Ultra-Filters and Culligan Store Solutions Vending Units.

### Service Level 2

- The water treatment systems calls the Culligan Server once per day.\*
- If there is an error, a report is e-mailed immediately to the Culligan dealer and customer.
- A monthly report is generated and sent to the dealership and customer.

## Monitoring Options Tailored to Your Culligan Matrix Solutions Equipment.

### Pretreatment Solutions

#### Filters

- Regen cycle number
- Total gallons since new
- Remaining filter life (gallons)
- No remote display signal
- Motor position not found
- Position sensor error
- External alarm input
- Replace Filter/Media

#### Softeners

- Regen cycle number
- Days since last regeneration
- AVG number of days between regenerations
- Number of salt days remaining
- Salt bridge
- Brineline blockage
- Brine tank overflow
- No remote display signal
- Motor position not found
- Position sensor error
- External alarm input
- Low salt

The above monitoring options are standard. If you are interested in other monitoring options, please contact Culligan.

### Membrane Solutions

#### Reverse Osmosis Systems

- Total feed water since new
- Total product water since new
- Total pump hours
- Most recent product TDS
- Daily average gallons of product water produced
- Feed water temperature
- Most recent RO% recovery
- Most recent RO% rejection
- Most recent pump discharge pressure
- Most recent membrane pressure drop
- Most recent RO membrane normalization data
- Most recent temperature
- Any current error flags

#### Ultra-filtration Systems

- Average daily usage
- Total gallons since new
- Peak flow rate
- Membrane production

### Polishing Solutions

#### PEDI

- Current flow rate
- Daily usage volume
- Average daily usage
- Total gallons since new
- External filter capacity
- Two auxiliary switches (i.e. monitor TDS alarm, tank switch over etc).

#### CEDI

- Product quality
- Product flow rate
- Reject flow rate
- Feed water temperature

### The Culligan Smart Controller can also monitor other equipment, signals and alarms

- Flow rates
- Pressure
- TDS/water quality
- Analog voltage input signals
- Dry contact inputs

# A Global Monitoring Solution with Customized Local Service.



## Over 800 Culligan Dealers in more than 90 countries

Algeria	Croatia	Guatemala	Kenya	Norway	Singapore	Thailand
Angola	Cyprus	Guine Bissau	Korea	Oman	Slovak Republic	Trinidad
Argentina	Czech Republic	Haiti	Kuwait	Pakistan	Slovenia	Tunisia
Australia	Dubai	Honduras	Laos	Panama	South Africa	Turkey
Austria	Ecuador	Hong Kong	Laticia	Peru	Spain	Turkish Republic of Northern
Bahamas	Egypt	Hungary	Lebanon	Philippines	Sri Lanka	Cyprus
Belgium	El Salvador	Indonesia	Lithuania	Poland	St. Maarten NA	UK
Belize	Estonia	Ireland	Malta	Portugal	St. Thomas	Ukraine
Bermuda	Finland	Israel	Mexico	Puerto Rico	Sweden	USA
Cambodia	France	Italy	Morocco	Qatar	Switzerland	Venezuela
Canada	Germany	Jamaica	Mozambique	Romania	Tahiti	Vietnam
China	Greece	Japan	New Zealand	Saudi Arabia	Taiwan	
Costa Rica	Guam	Jordan	Nigeria	Serbia	Tanzania	

**Finally, an end-to-end solution from a single source.**



## Place your industrial and commercial water treatment needs in the hands of a global leader.

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## The Culligan Commercial Smart Controller



### You Manage Your Business. We'll Manage Your Water.

For businesses using water treatment in their day to day operations, consistency of water quality means avoiding premature equipment failure and maintaining product/service quality. This leads to better consumer experiences and lower cost of operations. Culligan's exclusive advanced electronic capabilities enables businesses to operate at improved efficiency and continuously provide high quality water. With the cost effective smart controller our customers can monitor their water treatment equipment performance and maintenance needs, at a single site or across multiple ones 24 hours a day.

Control your Culligan Matrix Solutions™ equipment with a totally integrated Culligan Smart Controller.



Pre-Treatment  
Solutions



Membrane  
Solutions



Deionization  
Solutions



Storage  
Solutions



Distribution  
Solutions

## Exclusive Culligan Smart Controller Advanced Electronics Include:

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- **Brine Reclaim**

Culligan's brine reclaim feature for water softeners can help reduce salt consumption up to 25% or more and reduce discharge to drain leading to additional operating efficiencies. This feature allows Culligan to design a solution around your overall water management/wastewater minimization needs and sustainability goals.

- **Progressive Flow**

With Culligan's patented progressive flow feature, you can size softeners and filters based on average water usage, which helps reduce capital costs. The feature is best suited for applications requiring intermittent/periodic high flow rates. The Culligan Smart Controller monitors water demand and brings additional tanks online or offline as the flow demand changes.



# A Customized Communication Level Based on Your Monitoring Needs.

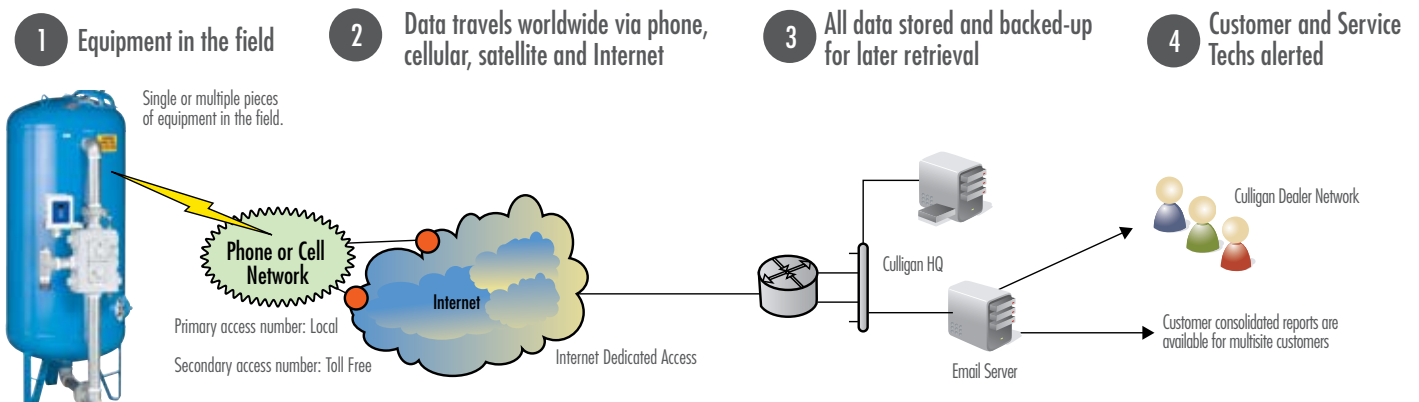
## Service Level 1

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## Service Level 2

- The water treatment systems calls the Culligan Server once per day.\*
- If there is an error, a report is e-mailed immediately to the Culligan dealer and customer.
- A monthly report is generated and sent to the dealership and customer.

\* Available only on Reverse Osmosis, Ultra-Filters and Culligan Store Solutions Vending Units.



# Monitoring Options Tailored to Your Culligan Matrix Solutions Equipment.

Pretreatment Solutions	Membrane Solutions	Polishing Solutions	Culligan Store Solutions Vending Units
<b>Filters</b> <ul style="list-style-type: none"><li>• Regen cycle number</li><li>• Total gallons since new</li><li>• Remaining filter life (gallons)</li><li>• No remote display signal</li><li>• Motor position not found</li><li>• Position sensor error</li><li>• External alarm input</li><li>• Replace Filter/Media</li></ul>	<b>Reverse Osmosis Systems</b> <ul style="list-style-type: none"><li>• Total feed water since new</li><li>• Total product water since new</li><li>• Total pump hours</li><li>• Most recent product TDS</li><li>• Daily average gallons of product water produced</li><li>• Feed water temperature</li><li>• Most recent RO% recovery</li><li>• Most recent RO% rejection</li><li>• Most recent pump discharge pressure</li><li>• Most recent membrane pressure drop</li><li>• Most recent RO membrane normalization data</li><li>• Most recent temperature</li><li>• Any current error flags</li></ul>	<b>PEDI</b> <ul style="list-style-type: none"><li>• Current flow rate</li><li>• Daily usage volume</li><li>• Average daily usage</li><li>• Total gallons since new</li><li>• External filter capacity</li><li>• Monitor TDS alarm, tank switch over etc.</li></ul>	<b>Culligan Store Solutions Vending Units</b> <ul style="list-style-type: none"><li>• Remaining service capacity (gallons)</li><li>• Daily usage volume (gallons)</li><li>• Daily peak flow volume (gallons)</li><li>• Daily peak flow rate (gpm)</li><li>• Max time interval with no flow (min)</li><li>• Data of next scheduled service</li><li>• UV bulb life remaining</li><li>• High TDS alarm</li><li>• Tank overflow monitor</li></ul>
<b>Softeners</b> <ul style="list-style-type: none"><li>• Regen cycle number</li><li>• Days since last regeneration</li><li>• AVG number of days between regenerations</li><li>• Number of salt days remaining</li><li>• Salt bridge</li><li>• Brineline blockage</li><li>• Brine tank overflow</li><li>• No remote display signal</li><li>• External alarm input</li><li>• Motor position not found</li><li>• Position sensor error</li><li>• Low salt</li></ul>			

## The Culligan Smart Controller can also monitor other equipment, signals and alarms

- Flow rates
- Pressure
- TDS/water quality
- Analog voltage input signals
- Dry contact inputs

Finally, an end-to-end solution from a single source.



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## The Culligan Smart Controller for Portable Exchange Deionization Systems and the Culligan Smart Monitor



### Reduce risks in water related processes while reducing operating costs

The Culligan Smart Controller for PEDI systems and the Culligan Smart Monitor provides advanced control and monitoring for a wide variety of water treatment equipment. It can be used to monitor and control softeners, filters, ultra-filters, reverse osmosis and PEDI systems made by Culligan and most other manufacturers. With the Culligan Smart Controller / Monitor, which is comprised of multiple sensors and communications capabilities, customers can monitor their water treatment equipment performance and maintenance needs at a single site or across multiple ones 24/7. This helps companies to operate at improved efficiency, reduce potential production delays and decrease overall operating costs.



Pre-Treatment Solutions



Membrane Solutions



Deionization Solutions



Storage Solutions

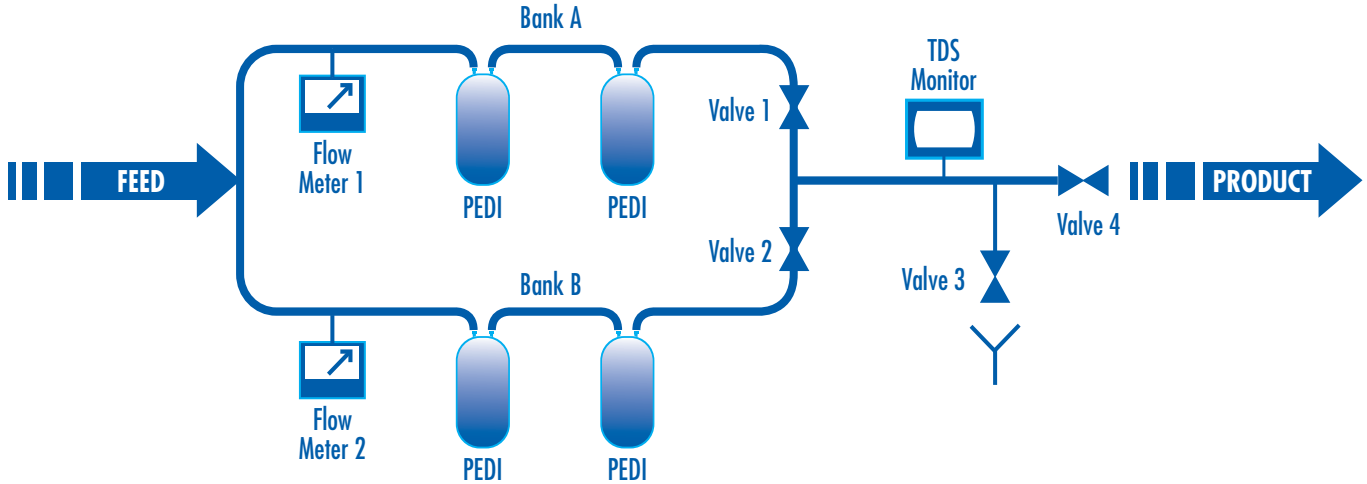


Distribution Solutions

# Culligan Smart Controller for PEDI systems

## Application: PEDI Bank Switcher

In this mode the Culligan Smart Controller can be used to switch between two banks of DI tanks.



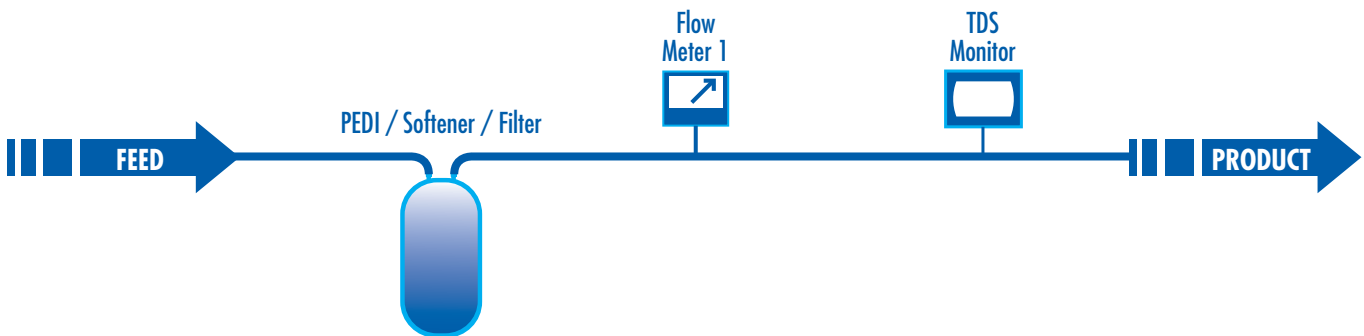
### How it works:

At first deionized water from bank "A" is sent to drain until a specific quality is met. This is called a quality rinse. Once the water quality requirement is met then high quality deionized water flows to service. The system continues to monitor water quality and provides deionized water from bank "A" until bank "A" is no longer able to produce the specified water quality. At this point it switches to bank "B" and repeats the same process with bank "B". The system monitors the total gallons of water and the average daily gallons through each bank. It also allows both banks to be set with a capacity and the system counts down from that capacity until it reaches 0. At this point, the system calls in, to indicate that the total capacity has been exhausted. However, as long as water of sufficient quality is produced by the system, deionized water continues to be supplied to service.

# Culligan Smart Monitor

## Application: Culligan Smart Monitor for PEDI, Softener or Filter

In this mode, the Culligan Smart Monitor can supervise either one PEDI tank or up to two softener or filter tanks.



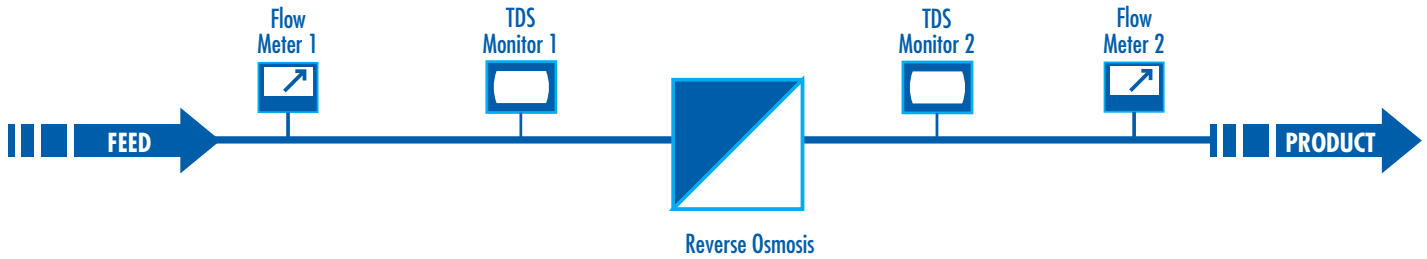
### How it works:

The tanks can each be programmed with an initial capacity. With the flow meter(s) the system monitors the remaining capacity in each tank, keeping track of average daily gallons used, and remaining capacity. When the remaining capacity reaches zero, an alarm condition is generated. One TDS probe can be used to determine if the product TDS is exceeding its programmed limit. Differential pressure switches can also be used to trigger an alarm. Furthermore, up to two pressure transducers can be programmed with upper and lower limits. If the upper or lower limits are exceeded, the monitor will trigger an alarm. External dry contact inputs can also be used, such as from a hardness analyzer or other water quality monitoring device, to trigger an error condition. The system can also monitor an Aqua Sensor probe.

# Culligan Smart Monitor (continued)

## Application: Culligan Smart Monitor for RO

In this mode the Culligan Smart Monitor supervises a RO system.



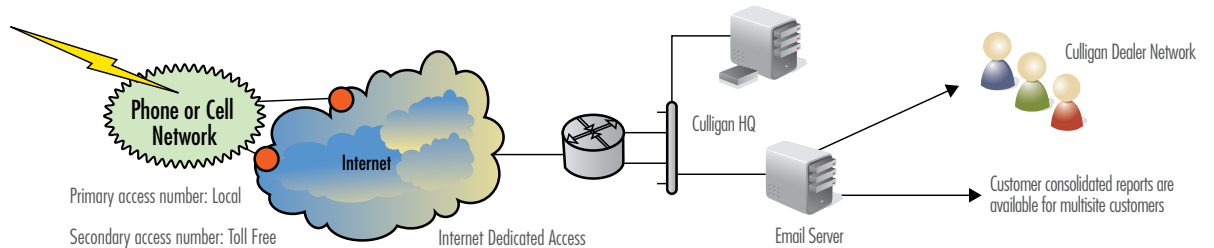
### How it Works:

The Culligan Smart Monitor can be connected to flow meters, water quality (TDS) probe, temperature probes, and pressure transducers monitoring the performance of an RO system. With the pressure transducers on membrane feed and waste lines, product flow meter and a temperature probe, the Smart Monitor can calculate normalized flow through the membranes. With the flow meters the Smart monitor can calculate % recovery and % rejection. Furthermore, limits can be set on %recovery, % rejection, product TDS, water temperature and pressure so that the system generates an appropriate error message if a limit is exceeded. Many RO controllers have a dry contact alarm output. A dry contact output can be connected to one of the switch inputs on the Culligan Smart Monitor.

## A Global Monitoring Solution with Customized Local Service

- 1 Equipment in the field
- 2 Data travels worldwide via phone, cellular, satellite and Internet
- 3 All data stored and backed-up for later retrieval
- 4 Customer and Service Techs alerted

Single or multiple pieces of equipment in the field.



## Exclusive Culligan Smart Controller for PEDI and Smart Monitor Features Include:

- **Historical Operating Data**  
Starting at the time of installation, system operating data is stored and can be accessed to monitor trends over time.
- **Alarm Recognitions**  
The Culligan Smart Controller allows you to monitor and set lower and upper limits on a number of system parameters.
- **SCADA / Control Room PLC Interface**  
The Culligan Smart Controller can operate as a remote terminal unit (RTU) and can be monitored directly by the Customer's control room SCADA system. Connections are available for RS232, RS485, USB and Modbus communication networks.
- **Telemetry Options**  
With telemetry options, you can connect your Matrix water treatment system via landline or cellular phone to Culligan.

## Benefits of using the Culligan Smart Controller for PEDI and the Culligan Smart Monitor

- **Reduced labor costs**  
The Culligan Smart Controller for PEDI systems automatically switches banks eliminating the need for manual control, which helps reduce labor costs.
- **Help customer quickly respond to system variations and promote consistent water quality**  
The alarm recognition feature provides an alarm output if specific limits for system parameters are exceeded, allowing the customer to respond quickly to system variations and promote consistent water quality.
- **Predictability of maintenance**  
The historical operating data feature, allows customers to monitor trends over time and predict maintenance schedules.
- **Continuous monitoring and control 24/7 with local service**  
The telemetry feature and the Culligan dealer service network allow us to monitor a water treatment system centrally and service the system locally.

Finally, an end-to-end solution from a single source.



Place your industrial and commercial water treatment needs in the hands of a global leader.

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## Customize your water treatment equipment for improved return on investment

To operate your facility at improved levels of efficiency and achieve accelerated ROI, customize your water treatment system with Culligan exclusive accessories:

- Brine Reclaim
- Aqua Sensor®,
- Progressive Flow.

Culligan exclusive accessories are part of Culligan Matrix Solutions™ that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan Matrix Solutions offer options that help deliver the quality of water to meet your needs.

### EXAMPLES OF MARKETS SERVED:

CLINICS  
 EDUCATIONAL FACILITIES  
 ENERGY & POWER  
 FOOD & BEVERAGE PRODUCTION  
 FOOD SERVICE/RESTAURANTS  
 GROCERY  
 HEALTHCARE/HOSPITALS/BIO-PHARMACEUTICAL  
 HOSPITALITY/LODGING  
 MANUFACTURING  
 MUNICIPAL DRINKING WATER  
 OIL & GAS

### Culligan Matrix Solutions Advantages:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery/Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Wireless Remote Monitoring Options
  - Telemetry Options



Pre-Treatment  
Solutions



Membrane  
Solutions



Deionization  
Solutions



Storage  
Solutions



Distribution  
Solutions

# Culligan Brine Reclaim

## How it Works:

Culligan's Brine Reclaim technology returns a portion of reusable brine to the brine tank during a softener regeneration. During a typical softener regeneration brine is directed from the salt tank to the softener and then to drain. During the first part of the brine cycle the brine is laden with "hardness". During the later part of the regeneration cycle the "hardness" laden brine is replaced with "soft or sweet brine". With Brine Reclaim the "sweet brine" is diverted back to the salt tank to be used in the next regeneration cycle. The amount of brine directed to the brine tank is directly proportional to amount of salt saved.

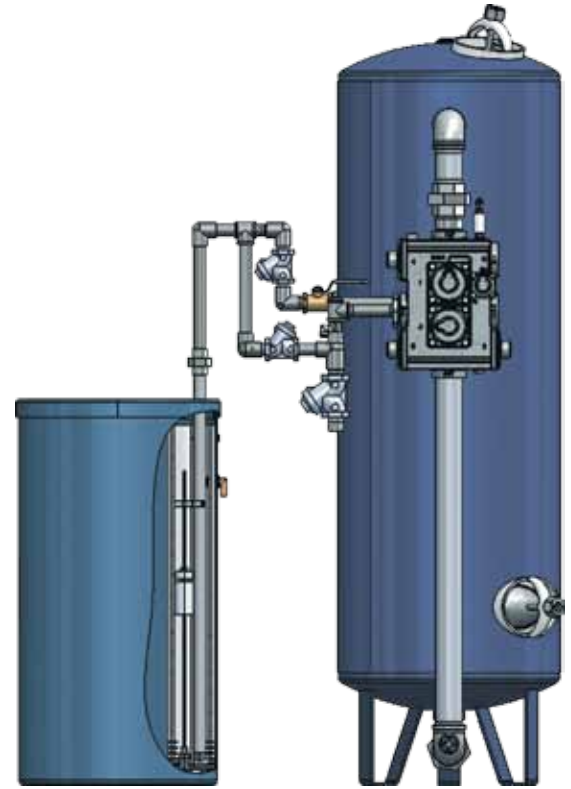
## Benefits

This solution enables your softener and your entire water treatment system to operate at improved efficiency.

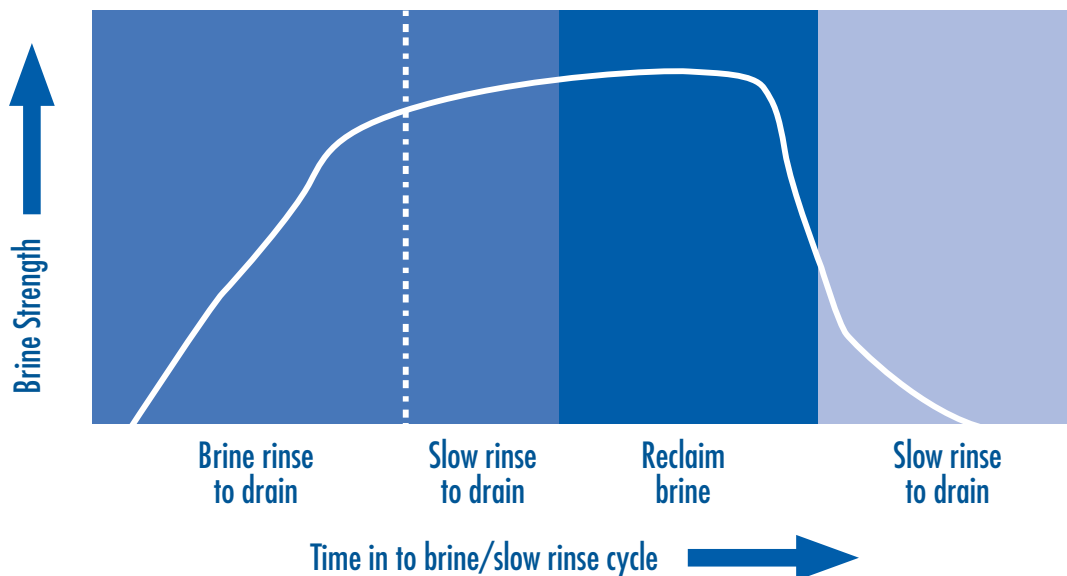
## Brine Reclaim can provide the following benefits:

- Reduced salt usage up to 25%
- Reduced water usage
- Reduced sewage costs as a result of reduced discharge to drain
- Reduced labor costs (salt loading costs)
- Increased Efficiency
- Improved return on investment (ROI)

Brine Reclaim can be retrofitted to improve your existing water softener, or can complete your end-to-end Matrix Solutions system.



## Typical Brine Curve for a Softener

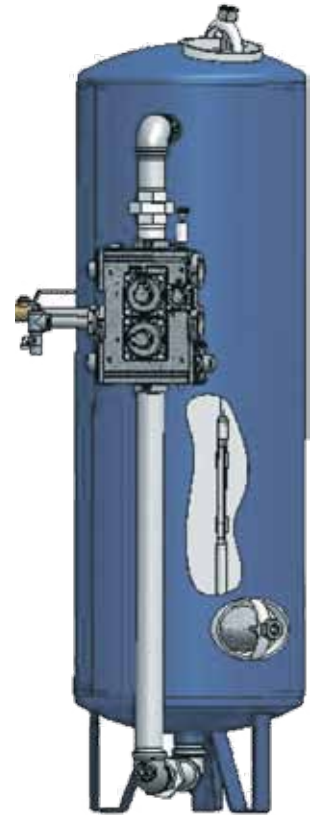




# Culligan Aqua Sensor

## How it Works:

With Culligan Aqua Sensor technology, an internal probe monitors the conductivity of the softener resin bed. Based on the measurements, it signals the need for regeneration when the softener is nearing exhaustion. The Aqua Sensor also monitors conductivity of the resin bed during the regeneration cycle. As a result, it controls the duration of the brine cycle.



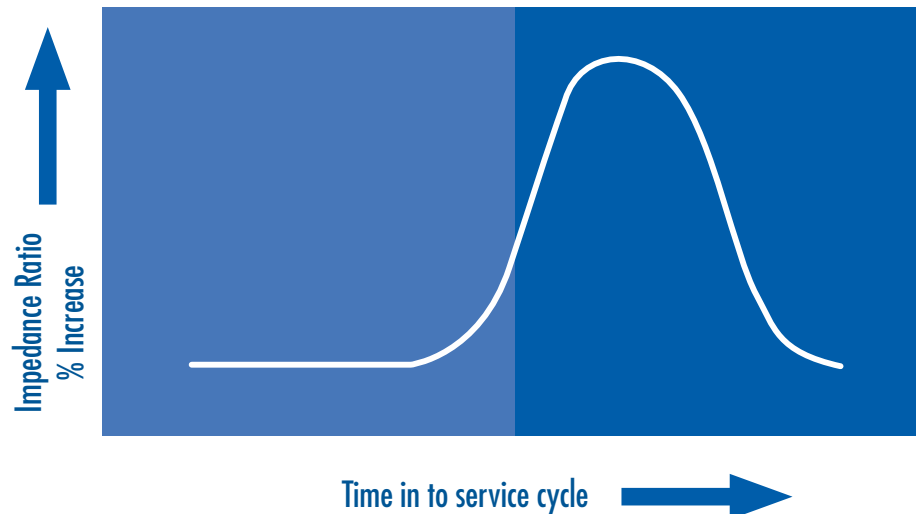
## Benefits

Most softeners regenerate based on time or water flow, wasting salt and water. The Aqua Sensor adjust for influent water conditions (water quality, pressure, flow rate, temperature etc.) and provides for a more efficient softener operation.

## Aqua Sensor provides the following benefits:

- Significant salt savings
- Significant water savings
- Reduced operating costs
- Improved return on investment (ROI).

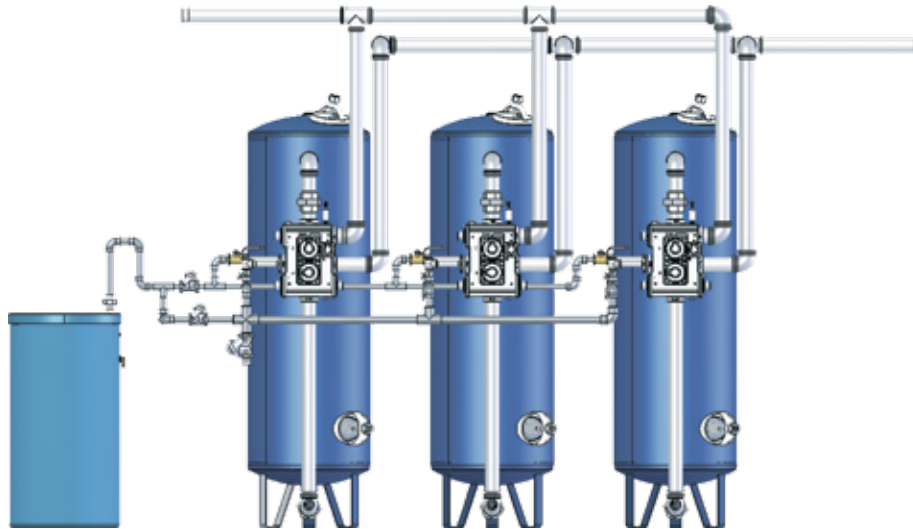
## Typical Aqua Sensor Measurements during a Service Cycle



# Culligan Progressive Flow

## How it Works:

The Culligan Progressive Flow feature allows for one or more tank in a multiple tank softener or filter system to either be online or offline based on downstream flow demand. The Culligan Smart Controller monitors water demand and brings additional tanks online or offline as the flow demand changes. The feature is best suited for applications requiring intermittent/periodic high flow rates.



## Benefits

Culligan designs your unique system based on your specific requirements—feed water, production and installation needs. With Progressive Flow, Culligan Matrix Solutions efficiency and cost savings are built into every water treatment system.

## Progressive Flow provides the following benefits:

- Yields higher water flow rates using smaller tanks
- Improved efficiency
- Reduced initial capital costs
- Reduced operating costs
- Efficient use of space

Finally, an end-to-end solution from a single source.



Place your industrial and commercial water treatment needs in the hands of a global leader.

For over 75 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.



# Other



Pre-Treatment  
Solutions



Membrane  
Solutions



Deionization  
Solutions



Storage  
Solutions







Distribution  
Solutions

## C-Series Systems by Culligan International



Culligan International drinking water treatment systems are built to operate in a rugged environment, yet easy to maintain. With nearly 75 years of experience, we are familiar with the drinking water industry standards and the need to consistently manufacture reliable drinking water processing plants. That's why we engineer and build our process equipment using globally accepted standards and components and selected vendors.

From surface to well to sea water, we provide technologies to meet these requirements and more. Pick one of our standard units or select upgrade options to customize the plant.

	150 POP	\$ <input type="text"/>	<input type="text" value="Date:"/>	<input type="text" value="Quote good for 30 days."/>
	300 POP	\$ <input type="text"/>		
	600 POP	\$ <input type="text"/>		
	1200 POP	\$ <input type="text"/>		

Finally, an end-to-end solution from a single source.

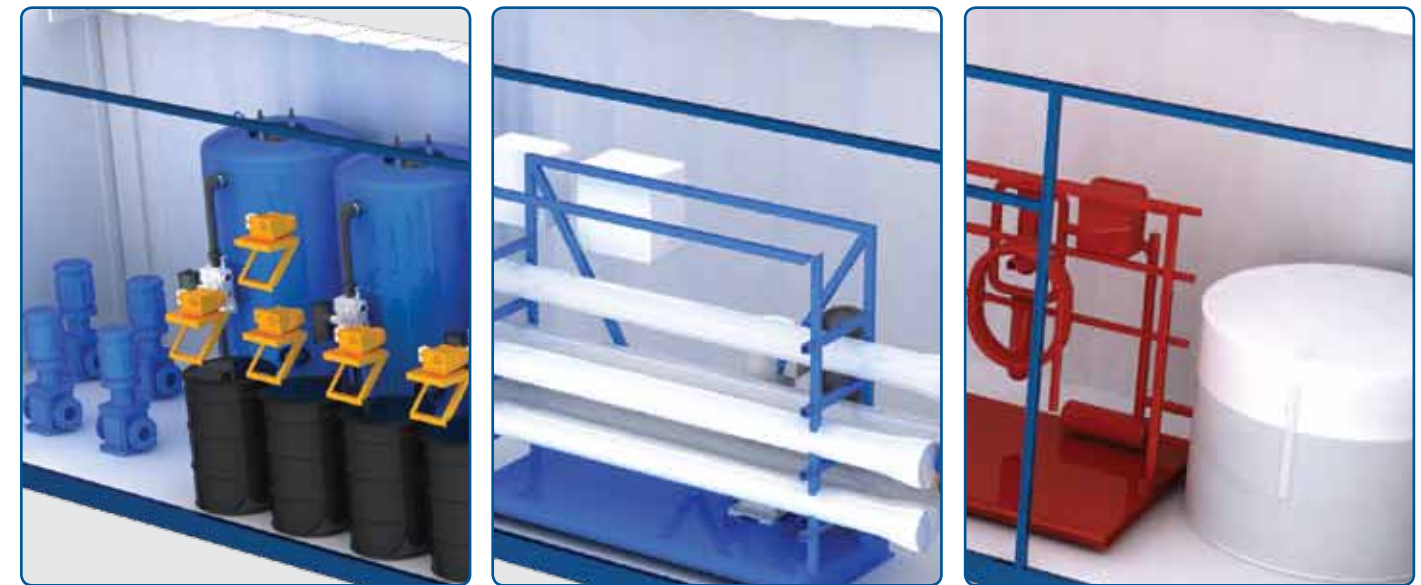


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## Culligan® C-Series Potable Drinking Water System



### Culligan C-Series Potable Drinking Water System Applications

Drinking water systems on worksites

Drinking water systems for specialized applications (i.e. apartment building, resorts, cruise ships and oil platforms etc.)

Emergency response drinking water treatment needs during catastrophic events

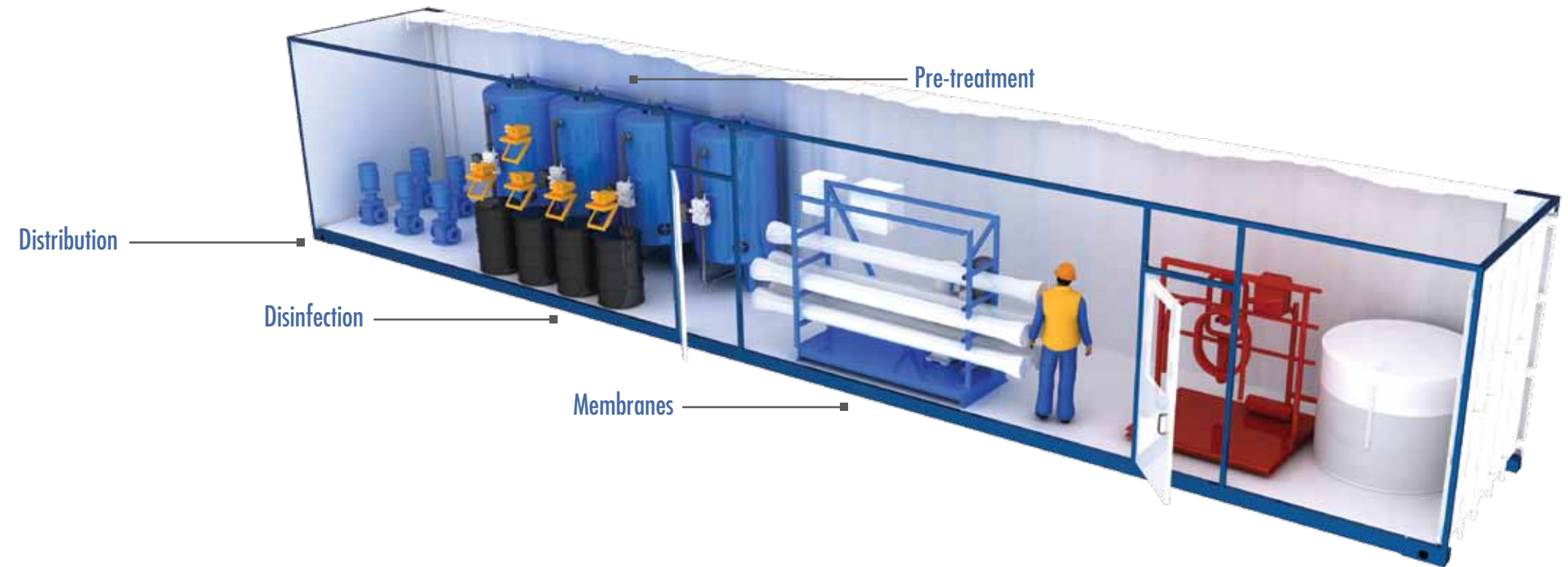
### Potable Drinking Water Treatment Solution For 150, 300, 600, and 1200 Person Populations

The Culligan C-Series Potable Drinking Water System provides comprehensive multi-level water purification, monitoring and control in a single solution. The modular C-Series system is designed for a wide variety of feed water sources (i.e. brackish well water, surface water and sea water). The system can be operated in a rugged outdoor environment and can be installed quickly to seamlessly deliver large quantities of water on demand.



# Modular Pre-Engineered Fast to Market Drinking Water Treatment Plants

The modular design with pre-fabricated components creates one of the fastest complete systems to market. Various Culligan Matrix Solutions modules can be combined to provide a customized solution to help you achieve your water quality needs. This reduces opportunity costs and minimizes use of capital and environmental resources.



## Design Standards

Every system's feed water is analyzed for contaminants to help assure the proper treatment equipment is being selected.

## The Culligan Smart Controller

The cost effective Smart Controller, which comprises of multiple sensors, allows customers to monitor and trend the performance of the Culligan C-Series water treatment system across a single site or multiple ones 24/7. For systems in remote locations, system performance email alerts can be sent to a handheld wireless device.



## Pre-treatment

Pre-treatment includes multi-media filtration, softening and chemical treatment. Multi-media filtration, reduces turbidity, odors, iron, manganese and heavy metals from water. Softening reduces water hardness and prevents scale. In some cases, chemical treatment may be used to help maintain water quality requirements.



## Membranes

Micro-filters, ultra-filters, nano-filters and reverse osmosis membranes reduce turbidity, suspended solids, dissolved solids and organic substances. Micro-filters reduce turbidity and solids. Ultra-filters reduce turbidity, residual suspended solids and high molecular weight dissolved substances. Nano-filters remove dissolved constituents and multivalent ions. Reverse Osmosis is an effective barrier to salts, micro-contaminants and organic substances, making it ideal for applications where high-purity water is needed.



## Distribution

Leading brand name manufacturer pumps are utilized as part of Culligan Matrix Solutions to fulfill water system needs. Pumps and materials are selected based on the needs of individual customers.



## Disinfection

Culligan Matrix Solutions disinfection systems help maintain the quality of treated water. Chlorine and UV disinfection can be used to inhibit bacteria and microbiological contamination at the filtration site.



## We build to ENGINEERED STANDARDS:

- ANSI – American National Standards Institute
- ASTM – American Society For Testing And Materials
- ASME – American Society Of Mechanical Engineering
- NEMA – National Electrical Manufacturers Association
- IEEE – Institute Of Electrical And Electronic Engineers
- AWWA – American Water Works Association





# Markets



Pre-Treatment  
Solutions



Membrane  
Solutions



Deionization  
Solutions



Storage  
Solutions



Distribution  
Solutions



## Industrial Food & Beverage Solutions



### WATER TREATMENT APPLICATIONS:

HIGH PURITY WATER FOR INGREDIENT, BEVERAGE  
AND FLUID MIXING (INORGANIC & ORGANIC)  
PROCESS/INGREDIENT WATER  
UTILITY WATER FOR PRODUCTION  
BOILER FEED WATER MAKE-UP  
PRE-TREATMENT TO PROTECT EQUIPMENT/  
EXTEND LIFESPAN  
WASTEWATER MINIMIZATION  
CLEAN IN PLACE  
SANITIZATION

### Value every drop of water with a cost effective water treatment solution.

Water is a precious resource. From start to finish it is important for profitability to use ingredient, process, and utility water wisely in food and beverage manufacturing. For instance, complete removal of certain organic and inorganic matter is critical to process waters that have validated QA/QC requirements. Culligan Matrix Solutions™ can help food and beverage manufacturers attain maximum return on investment (ROI), by ensuring specific contaminants are removed efficiently, minimizing waste in the first place, improving the performance of their equipment, reducing maintenance costs and improving operational efficiency.

### Meet and exceed specific quality requirements.

**Accelerated ROI** – Consistency of water quality in food and beverage production means better yields, improved product quality and less waste resulting in faster revenue capture.

**Flexibility** – Culligan's Matrix Solutions feature modular technologies that can be readily "mixed and matched", to ensure that the right contaminants are removed and the correct water quality is achieved.

**Reduce wastewater** – The superior membrane technologies and ion exchange systems of the Culligan Matrix can reduce wastewater discharge. These processes may aid food and beverage manufacturers in meeting both local regulations and strict EPA regulations.

**Advanced Electronic Capabilities** – The most advanced water treatment system features historical operating data logging, remote monitoring, and telemetry as a standard option at a very cost effective price. Additionally, there are full PLC capabilities available from Matrix Solutions based on the integration requirements of the client.

*"Today's food and beverage manufacturers require end-to-end water treatment systems that are delivered faster, better and less expensive. Culligan® Matrix Solutions™ deliver on all three with a single-source, comprehensive technology platform that addresses a complete range of water treatment applications."*



## We ask the right questions so you get the right solution.

Our consultative approach begins with a Culligan professional working with you to identify your specific water quality needs. By understanding these needs we can customize a system that gives you everything you require and nothing you don't – saving you money and helping you increase your return on investment (ROI). At Culligan, we take pride in working closely with our customers so we can provide comprehensive industrial water treatment solutions.

## Water Treatment Solutions for the Food and Beverage Industry.

### High purity water for ingredient, beverage and fluid mixing

Food and beverage manufacturers require high purity water for ingredient, beverage and fluid mixing applications. Furthermore, the water treatment system has to be reliable to maintain QC standards and ensure consistent production. Culligan exclusive advanced electronics, including alarm recognitions, historical operating data logging, remote monitoring and telemetry options, can help avert system failures and therefore help our food and beverage clients maintain consistent production and reduce business risk.

### Process and utility water treatment

In food and beverage production, treating process and utility water can lead to significant cost savings and accelerated revenue capture. For instance, treating boiler feed water make-up with a reverse osmosis system from the Culligan Matrix Solutions arsenal can reduce dissolved solids. This will enable the boiler to operate at more cycles of concentration, thus reducing the blow down and make up water requirements. Reduced make-up and blow down results in direct energy and chemical savings. Other technologies in the Culligan Matrix that could be used to treat process water include softening, microfiltration, ultra-filtration, nano-filtration, portable exchange deionization and continuous electro deionization.

### Wastewater minimization and resource sustainability

Our food and beverage prospects and customers tell us that in today's business climate it just not about making high quality water that meets their process needs but they must consider resource sustainability. For instance, Culligan was tapped by Cadbury Adams in Rockford, Illinois to design a water treatment solution incorporating the company's sustainability goals. Culligan proposed a brine reclaim system that saved the company approximately 221,000 lbs of salt and reduced discharge by 490,000 gallons of water, through a nine month period. With our comprehensive discovery process and consultative approach, we can design a solution that meets your overall onsite water management and wastewater minimization needs.

Finally, an end-to-end solution from a single source.



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## Industrial Oil and Gas Solutions



### WATER TREATMENT APPLICATIONS:

SOFT/RO WATER FOR STEAM GENERATORS/BOILERS

PRE-TREATMENT TO PROTECT  
EQUIPMENT/EXTEND LIFESPAN

COOLING TOWER MAKE-UP

OIL PLATFORM DRINKING WATER SYSTEMS

MICRO ORGANISM CONTROL

WATER RE-USE AND WASTEWATER MINIMIZATION

## Unleash the power of pure energy.

Oil and gas companies depend on clean, quality water for recovery, exploration and production in the field. For example, many need ultra-soft water for oil field steam generators and boilers, to reduce scaling and protect their equipment. Culligan Matrix Solutions™ uses patented technology to facilitate recovery processes and help lengthen the lifespan of steam generators and other types of equipment, leading to accelerated revenue capture.

### Culligan water works harder.

**Flexibility** – Containerized mobile systems, which can be moved across drilling sites, offer a high degree of flexibility.

**Cost savings** – Dramatically improve your bottom line with cleaner water. The Culligan Matrix Solutions helps maintain a continuous flow of water through your cooling towers with reverse osmosis treatment to reduce dissolved solids.

**Improve energy efficiency** – In some cases, re-use water can be treated with an UF/RO system, pre-treatment, ion exchange, and multi-media filters, which may result in higher quality product water depending on feed water conditions. This may improve the energy efficiency of equipment and processes leading to additional cost savings.

**Reduce wastewater** – The superior membrane technologies and ion exchange systems of the Culligan Matrix can reduce wastewater discharge. These processes may aid refineries in meeting both local regulations and strict EPA regulations.

**Advanced Electronic Capabilities** – The most advanced water treatment system features historical operating data logging, remote monitoring, and telemetry as a standard option at a very cost effective price. Additionally, there are full PLC capabilities available from Matrix Solutions based on the integration requirements of the client.

*“For oil and gas companies, minimizing downtime reduces business risk. And, consistency of water quality in the recovery, exploration and production processes helps to accelerate revenue capture.”*



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## Water Treatment Solutions for the Oil and Gas Industry.

### Water treatment for oil field steam injection

Oil and gas companies depend on clean water for oil field steam injection. Modules from the Culligan Matrix Solutions product arsenal, including filters and softeners can be used to decrease hardness and other contaminants in the raw water supply. Pre-treatment filters and softening can reduce scaling and pro-long the life of equipment. For instance, Culligan was tapped to provide a custom engineered system for an Oil Sands Project in Alberta, Canada. Our customer required ultra soft water for the steam generators in their bitumen and heavy oil recovery processes. Culligan proposed a solution including a 10' x 40' skid-mounted; PLC controlled four tank duplex alternative softener system producing 50 GPM influent to the steam generators. Pre-treatment filters ahead of the softener system were used to reduce sediments in the raw water supply.

### Process water treatment

In oil recovery, exploration and production, treating process water can lead to significant cost savings and accelerated revenue capture. For instance, treating boiler feed water make-up with a reverse osmosis system from the Culligan Matrix Solutions arsenal can reduce dissolved solids. This will enable the boiler to operate at more cycles of concentration, thus reducing the blow down and make-up water requirements. Reduced make-up and blow down results in direct energy and chemical savings. Other technologies in the Culligan Matrix that could be used to treat process water include softening, microfiltration, ultra-filtration, nano-filtration, portable exchange deionization and continuous electro deionization.

### Wastewater minimization

Today, stringent local and national discharge requirements are creating a need for overall onsite water management and wastewater minimization. These new demands at times require water system modifications, equipment retrofits, or system replacements to enable refineries to minimize the use of water and wastewater. With our comprehensive discovery process and consultative approach, we can design a solution that meets your overall onsite water management and wastewater minimization needs.

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## Industrial Manufacturing Solutions



### WATER TREATMENT APPLICATIONS:

BOILER FEED WATER MAKE-UP

PROCESS WATER MAKE-UP

RE-USE OF GREY WATER IN OTHER PARTS OF  
MANUFACTURING PROCESS (FOR RECYCLING AND  
WASTEWATER MINIMIZATION)

RECYCLE WATER BACK TO COOLING TOWERS

BRINE RECLAIM FOR SOFTENER REGENERATION

WASTEWATER DISCHARGE FOR EPA COMPLIANCE

## Your unique needs require a customized solution.

Water is a valuable commodity in any manufacturing process. Manufacturing companies depend on clean, quality water throughout their entire business, such as for boiler feed water make-up, recycling back to cooling towers, improved process run times and overall quality and consistency of production. Many even reuse grey water in other parts of their manufacturing process. Compliance with U.S. Environmental Protection Agency (EPA) policies for wastewater discharge is also a constant driver of quality water treatment.

With Culligan Matrix Solutions™, a water treatment system can be designed for your influent water, your manufacturing process, and your need for efficiency.

### Expansive technology designed for improved production.

**Improve efficiency** – Water treated with Culligan Matrix modules can help you optimize the efficiency of your equipment, reduce energy costs and maintain a consistent level of production.

**Flexibility of design** – Culligan knows that every manufacturer is different. The Matrix Solution is designed with technologies to completely meet your needs, from multi-media filters, softening, membrane filtration, disinfection, to chemical treatment.

**Reduce waste** – Matrix Solutions makes it possible to reuse wastewater in other parts of production, to help meet EPA guidelines, and add to total cost-savings.

**Advanced Electronic Capabilities** – The most advanced water treatment system features historical operating data logging, remote monitoring, and telemetry as a standard option at a very cost effective price. Additionally, there are full PLC capabilities available from Matrix Solutions based on the integration requirements of the client.

*"We believe in creating long-term value for our company so partnering with a reputable leader like Culligan was an obvious choice."*

**Frank Donovan, Maintenance Supervisor, Georgia-Pacific**



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### CASE IN POINT: Georgia-Pacific, Phillips, Wisconsin

Georgia-Pacific is one of the world's leading manufacturers of tissue, pulp, paper, packaging, building products and related chemicals. The company has 300 locations around the world with this location being responsible for manufacturing interior hard board paneling then painting and finishing it.

**The problem:** With the need for steam in their daily operation, Georgia-Pacific was using a significant amount of hot water resulting in high energy costs. Furthermore, the boilers had dense scale build-up and needed to be blown down frequently to flush out impurities. The company wanted to expand their water treatment system and improve efficiencies.

**The solution:** With Culligan's discovery tool and Georgia-Pacific's input, Culligan proposed a reverse osmosis system which would reduce total dissolved solids (TDS) and offer energy and chemical savings. The goal was to lower the TDS which in turn would decrease the amount of blow down, improve energy efficiency and save money by decreasing water and chemical usage. Along with the reverse osmosis system, Culligan also recommended storage tanks, a CIP skid and a carbon filter from the Matrix Solutions product arsenal.

**The results:** Since the installation of the reverse osmosis equipment, Georgia-Pacific has reduced blow down from 4,500 gallons of water per day to less than 200 gallons. The reduced energy, water and sewage costs save the company \$31,000 a year. Add lower chemical costs and the company's total annual savings are \$52,711.

Now Georgia-Pacific is able to direct the concentrate water directly to the river rather than going through a wastewater treatment facility and incurring fees. And, the TDS of the feed water to the boiler has gone from 210 parts per million (12 grains per gallon) to approximately 24 parts per million (just over 1 grain per gallon), resulting in 8 times less solids entering the boiler. "Because of our improved energy conservation, Georgia-Pacific received a rebate check from our energy provider. That was an added bonus," stated Mr. Donovan.

By utilizing the latest technologies and efficient project execution, Culligan Matrix Solutions can put your operation on the path to improved ROI. Our solutions are designed to eliminate your costly water problems while improving the performance and efficiency of your current operation. We look forward to engineering a success story for you.

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## Industrial Energy & Power Solutions



### WATER TREATMENT APPLICATIONS:

BOILER AND COOLING TOWER MAKE-UP WATER  
COOLING TOWER RE-USE  
WASTEWATER DISCHARGE QUALITY COMPLIANCE  
OVERALL ONSITE WATER MANAGEMENT AND  
WASTEWATER MINIMIZATION

### Utilize the full power of a precious resource.

Water is a valuable component in the production of energy. Energy and power companies depend on clean, quality water to optimize cycles of concentration, reduce the amount of chemicals and energy used in boilers and cooling towers as well as for cooling tower re-use. Plants also need to closely follow EPA quality compliance policies for wastewater discharge and better manage water usage overall. Culligan Matrix Solutions™ uses patented technology to ensure that water is treated efficiently for environmental and economic benefits.

### Maximize your efficiency with the technology of Culligan Matrix Solutions.

**Flexibility** – Culligan’s Matrix Solutions feature modular technologies that can be readily “mixed and matched”, to meet the specific water treatment needs for energy and power companies. The system’s flexibility and mobility is also well suited for peaking plants in remote areas which require more robust materials, such as for power grids.

**Speed** – Culligan Matrix Solutions systems can be containerized with plumbing and wiring already built into the system prior to delivery, helping reduce onsite costs and installation time.

**Cost savings** – Water treated with reverse osmosis may optimize the efficiency of the cooling tower and reduces operating and chemical costs.

**Reduce wastewater** – The superior integrated membrane technologies and ion exchange systems of the Culligan Matrix can reduce wastewater discharge. These processes may aid utility operators in meeting EPA regulations.

**Advanced Electronic Capabilities** – The most advanced water treatment system features historical operating data logging, remote monitoring, and telemetry as a standard option at a very cost effective price. Additionally, there are full PLC capabilities available from Matrix Solutions based on the integration requirements of the client.

*“As the energy & power industry broadens, the spectrum of water treatment beyond just process water and wastewater - to include water reuse - opportunities for cost and environmental savings multiply. The Culligan® Matrix Solutions™ approach may help power plants improve environmental compliance and sustainability by reducing overall water consumption with efficient water balance plans.”*



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## Water Treatment Solutions for the Energy & Power Industry.

### Boiler make-up water treatment

Utility operators can improve their profitability by optimizing energy efficiency and reducing chemical costs. For instance, treating boiler feed water make-up with a reverse osmosis system from the Culligan Matrix Solutions arsenal can reduce dissolved solids. This will enable the boiler to operate at more cycles of concentration, thus reducing the blow down and make-up water requirements. Reduced make-up and blow down results in direct energy and chemical savings. Other technologies in the Culligan Matrix that could be used to improve energy efficiency include softening, microfiltration, ultra-filtration, nano-filtration, portable exchange deionization and continuous electro deionization.

### Cooling tower re-use

Energy and Power companies require treated water to optimize the cycles of concentration for cooling tower re-use. Using a reverse osmosis module from the Matrix Solutions arsenal can help reduce the conductivity along with scale forming constituents of the makeup water. This will enable the customer to operate the cooling tower at higher cycles of concentration, thus reducing the make up water and blow down. Reduced make-up water and blow down results in direct water and sewage cost savings.

### Wastewater minimization

Today, stringent local and national discharge requirements are creating a need for overall onsite water management and wastewater minimization. These new demands at times require water system modifications, equipment retrofits, or system replacements to enable utility operators to minimize the use of water and wastewater. With our comprehensive discovery process and consultative approach, we can design a solution that meets your overall onsite water management and wastewater minimization needs.

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## Municipal Drinking Water Solutions



### WATER TREATMENT APPLICATIONS:

EMERGENCY RESPONSE DRINKING WATER TREATMENT NEEDS DURING CATASTROPHIC EVENTS

EMERGENCY DRINKING WATER TREATMENT DEMANDS ON WORKSITES

DRINKING WATER TREATMENT FOR SMALL TO MEDIUM SIZED MUNICIPALITIES /COMMUNITIES

DRINKING WATER FOR SPECIALTY APPLICATIONS (I.E. APARTMENT BUILDINGS, RESORTS, CRUISE SHIPS AND OIL PLATFORMS ETC.)

CUSTOMIZED DRINKING WATER TREATMENT SYSTEMS (MINI-WATER TREATMENT PLANTS)

### Improved Drinking Water For All.

While the access to improved drinking water is on the rise, according to the World Health Organization (WHO) approximately 884 million of the world's population still relies on unimproved drinking water sources\*. In the United States, there are over 50,000 community water systems (CWSs) serving a population of over 292 million people, based on a 2008 EPA report\*\*. According to the same report "With the aging of the nation's infrastructure, the clean water and drinking water industries face a significant challenge to sustain and advance their achievements in protecting public health".

Culligan Matrix Solutions™ offer flexible, cost effective and sustainable systems to help meet municipal drinking water treatment needs around the world.

### Promote Consistency of Water Quality While Reducing Risk.

**Advanced Electronic Capabilities** – Culligan Matrix Solutions systems use cost-effective historical operating data logging, remote monitoring and telemetry to help municipalities monitor and trend the performance of their water treatment equipment. For water treatment systems in remote locations, system performance email alerts can be sent to a handheld cellular device. With this information municipalities can respond proactively to alarms to promote consistency of water quality while reducing risk.

**Flexibility** – Culligan's Matrix Solutions feature modular technologies that can be readily "mixed and matched" and tailored to varied feed water conditions to help meet municipal water treatment needs. For instance, a combination of ultra filtration, reverse osmosis, and disinfection technologies can be used to inhibit bacteria and help provide quality water.

**Cost-Effective Solution** – Culligan's global supply chain and modular product platform helps us tailor a cost effective municipal water treatment solution.

**Sustainable Solution** – Ultra filter membranes offer improved backwash capabilities for longer life. Furthermore, membrane technologies may offer options for reduction in chemicals and reduction in wastewater discharge.

\* World Health Organization and United Nations Children's Fund Joint Monitoring Programme for Water Supply and Sanitation (JMP). Progress on Drinking Water and Sanitation: Special Focus on Sanitation. UNICEF, New York and WHO, Geneva, 2008.



## We ask the right questions so you get the right solution.

Our consultative approach begins with a Culligan professional working with you to identify your specific water quality needs. By understanding these needs we can provide a comprehensive water treatment solution. At Culligan, we take pride in working closely with our customers so we can help meet municipal/community and worldwide drinking water treatment needs.

## Drinking Water Treatment Solutions for Municipalities/Communities

### Emergency response drinking water treatment needs

Culligan Matrix Solutions offer a number of flexible and portable technologies to help meet water treatment needs during catastrophic events. These containerized flexible systems can be pre-plumbed and pre-wired to help meet emergency response water treatment needs. For instance, in 2010 Culligan worked with international agencies to provide water treatment systems as part of international relief efforts. One of these containerized water treatment systems provided approximately 28,000 gallons per day serving the needs of communities affected by the catastrophic event.

### Drinking water treatment for small to medium sized municipalities/communities

In the United States, public drinking water systems are regulated by the environmental protection agency. Furthermore, aging water treatment infrastructure can also pose significant challenges for municipalities/communities. These regulations and infrastructure challenges can require water system modifications, equipment retrofits, or system replacements. Culligan Matrix Solutions offer a number of treatment technologies which can help meet the water treatment challenges faced by municipalities/communities.

### Drinking water for specialty applications

Culligan knows that individual needs cannot change to suit an "off-the-shelf" water treatment system. This inspired the revolutionary modular platform of Culligan Matrix Solutions, designed to address individual water treatment concerns. Culligan addresses the distinct drinking water treatment needs for specialty applications, including high rises, resorts, cruise ships and oil platforms.

**Finally, an end-to-end solution from a single source.**



**Place your commercial and industrial water treatment needs in the hands of a global leader.**

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.







## Commercial Restaurant and Foodservice Operation Solutions



### Culligan Commercial. A difference you can taste.

No matter what ingredients you add to your signature dishes, the one that makes the biggest impact is water. From improving the color and taste of food and beverages to increasing the effectiveness of dishwashers and food processing equipment, quality water makes all the difference. To be assured the best water treatment solutions are in place in your restaurant, coffee house or foodservice operation, you need a partner like Culligan Commercial.

#### WATER TREATMENT USES:

BOILER/HOT WATER PRE-TREATMENT  
DISH-WASHERS & GLASS-WASHERS  
STEAMERS & STEAM TABLES  
DRINKING WATER & COFFEE FILTRATION  
BEVERAGE & ICE PRE-FILTRATION

#### SPECIALIZING IN THE APPLICATION OF:

WATER SOFTENING  
MICRON SEDIMENT FILTRATION  
CARBON & BEVERAGE FILTRATION  
REVERSE OSMOSIS & UV STERILIZATION



#### Operation & Maintenance Advantages:

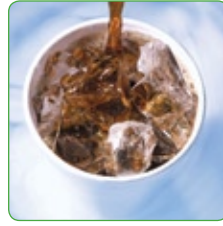
- Lower operating costs by as much as 30%
- Save 25-30% on detergent and chemical costs
- Reduce utility costs by as much as 30%
- Reduce scale buildup on dishwashing and food preparation equipment
- Experience 25% less downtime for maintenance repairs
- Extend life span of equipment, water heaters and dishwashers
- Increase effectiveness of dishwashers and food processing equipment
- Create easy-to-clean facility, reduce cleaning time and costs

#### Customer Benefits:

- Better tasting water, beverages, and food
- Cleaner, clearer ice cubes
- Properly carbonated beverages with great taste
- Brighter, whiter, and softer table linens
- Spot-free tableware, floors and windows
- Enhanced dining experience for customer and greater potential for repeat business

*"Water quality is a major part of what has made the Pizza House the best in our county. My ice and water is so filtered that my fountain sodas are actually preferred by my customers. I am now enjoying the added benefits of a thriving fountain beverage business, thanks to Culligan."*

**John Nahas, owner Our Pizza House, Pearl River, New York**



## Superior service with every order.

Every customer is important. And every customer is different. With a partner like Culligan Commercial, you can expect a water treatment plan as original as you are. And like you and your business, we pride ourselves on supporting our solutions with ongoing expert service.

## CASE IN POINT: Giovanni's Restaurant, Rockford, Illinois

As an independent business, a high quality dining experience is essential to the success of this Italian eatery. The image of Giovanni's is top quality and owner Joe Castrogiovanni was determined to uphold it.

**The problem:** Poor quality table water, cloudy ice cubes and weak beverage makeup was threatening the success of the restaurant. "Fresh, clean water is one of the best ways to make a great first impression and we were failing," recalls Mr. Castrogiovanni. The drinking water needed improvement—fast.

**The solution:** In order to demonstrate the high performance of our water treatment solutions, Culligan Commercial offered Giovanni's a product trial for their ice machines. The equipment was in place for 2 months and Mr. Castrogiovanni saw immediate improvement. Culligan Commercial installed an expanded B Series Reverse Osmosis system with pretreatment and storage to provide Reverse Osmosis water for all uses. The treated water was piped to ice machines, beverage service, bar guns, steamers and remote bars to ensure a consistent, high quality drinking experience for all patrons. Added services included salt delivery to soften the water and regular changing of Reverse Osmosis filters to maintain top performance.

**The results:** "Clear, great tasting water is one of the first things our customers enjoy when they enter our establishment," says Mr. Castrogiovanni. "I never get tired of hearing how great our water tastes!" High quality table water, crystal clear ice cubes and excellent beverages are the top benefits of Giovanni's Culligan solution. According to Mr. Castrogiovanni, his restaurant is now considered to be the finest in the city.

**Solutions from Culligan Commercial are designed to eliminate your costly water problems while improving the performance and efficiency of your current operation. We look forward to engineering a success story for you.**

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## Commercial Manufacturing Solutions



### Culligan Commercial. Made to perform.

Virtually every manufacturing process relies on water. With our experience and commitment to quality, Culligan Commercial can ensure that your water becomes a valuable asset and not a costly commodity. After a thorough analysis and review of your needs, we can engineer a customized, integrated solution to meet the requirements of your operation.

#### WATER TREATMENT USES:

BOILER/HOT WATER PRE-TREATMENT  
PROCESS APPLICATIONS  
COOLING & CHILLING SYSTEMS  
DRINKING WATER APPLIANCES

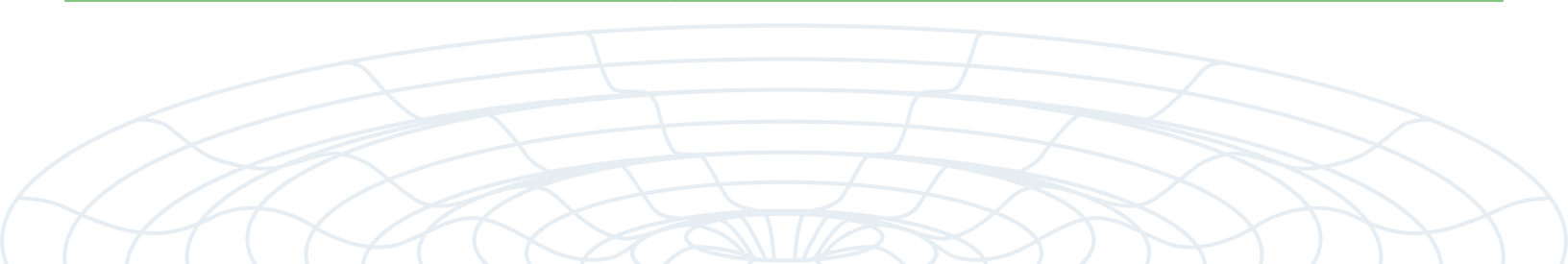
#### SPECIALIZING IN THE APPLICATION OF:

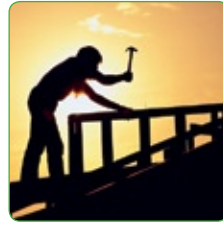
WATER SOFTENING & DEALKALIZATION  
CARBON & SEDIMENT FILTRATION  
REVERSE OSMOSIS  
DEIONIZATION & UV STERILIZATION

#### Our services and solutions will:

- Increase equipment and process efficiency
- Reduce operating and maintenance costs
- Minimize waste water
- Ensure regulations are met
- Reduce scaling
- Lower utility costs
- Help meet industry required process specifications

With global and local experience, engineers and technical experts, and equipment designed and manufactured in our own facilities, it's clear that Culligan earns the highest marks in the industry.





## Quality and efficiency in any environment.

Whether you are manufacturing tools, ice cream, motorcycles or plywood, water is an integral part of your operation. Culligan can create a solution as unique as your business, designed to deliver consistent water for all processes and higher product quality for your end users.

## CASE IN POINT: Georgia-Pacific, Phillips, Wisconsin

Georgia-Pacific is one of the world's leading manufacturers of tissue, pulp, paper, packaging, building products and related chemicals. The company has 300 locations around the world with this location being responsible for manufacturing interior hard board paneling then painting and finishing it.

**The problem:** With the need for steam in their daily operation, Georgia-Pacific was using a significant amount of hot water and their energy costs were very high. Plus, their boilers had dense scale build up and needed to blow down frequently to flush out impurities. The company wanted to expand their water treatment system and improve efficiencies.

**The solution:** Although Georgia-Pacific was using a softener, Culligan recommended a Reverse Osmosis system which would reduce total dissolved solids (TDS) and offer more energy and chemical savings. Culligan also installed storage tanks, a cleaner for the Reverse Osmosis system and a carbon filter to remove chlorine and protect the Reverse Osmosis membrane.

**The results:** Since the installation of the Reverse Osmosis equipment, Georgia-Pacific has reduced blow downs from 4500 gallons of water per day to less than 200 gallons. The reduced energy, water and sewage costs save the company \$31,000 a year. Add lower chemical costs and the company's total annual savings are \$52,711.

Now Georgia Pacific is able to direct the concentrate water directly to the river rather than going through a waste water treatment facility and incurring fees. And, the TDS of the feed water to the boiler has gone from 210 parts per million (12 grains per gallon) to approximately 24 parts per million (just over 1 grain per gallon), resulting in 8 times less solids entering the boiler.

**By utilizing the latest technologies and efficient project execution, Culligan Commercial can put your operation on the path to ROI success. Our solutions are designed to eliminate your costly water problems while improving the performance and efficiency of your current operation. We look forward to engineering a success story for you.**

## Finally, an end-to-end solution from a single source.



## Place your commercial and industrial water treatment needs in the hands of a global leader.

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## Commercial Healthcare Solutions



### Culligan Commercial. Caring for all your water needs.

Water is essential for life, good health and the recovery of your patients. As it runs through your operation, water can also improve the performance of your entire facility. At Culligan Commercial, we will design your water treatment solution, design and manufacture the equipment, and install all components. By having such control over the project you can be assured your custom-engineered system will meet your high standards.

#### WATER TREATMENT USES:

BOILER/HOT WATER PRE-TREATMENT  
COOLING TOWERS & CHILLERS  
FOOD SERVICE  
LAUNDRY FACILITIES  
LABORATORIES & RESEARCH ROOMS

#### SPECIALIZING IN THE APPLICATION OF:

WATER SOFTENING & DEALKALIZATION  
CARBON & SEDIMENT FILTRATION  
REVERSE OSMOSIS  
DEIONIZATION & UV STERILIZATION

#### Operational Advantages:

- Lower operating costs
- Save money by using less detergent and chemicals
- Reduce utility costs
- Provide high-quality water for consistency in lab experiments
- Provide superior water for sterilization of equipment in autoclaves
- Increase life span of equipment, water heaters and dishwashers

With global and local experience, engineers and technical experts, and equipment designed and manufactured in our own facilities, it's clear that Culligan earns the highest marks in the industry.



*"In a healthcare facility it's critical to protect the boilers, hot water heaters and laundry facility equipment, providing treated water to sterilization units will extend equipment life while providing a spot free rinse on the surgical instruments."*



## Where will you use Culligan?

From non-acute to acute care and assisted living facilities, Culligan Commercial can offer you the expertise and service you need to deliver the return on investment you deserve.

Requirement	Culligan Result		
Make-up water for boilers or cooling towers Facility use portable water (restrooms, etc.)	<ul style="list-style-type: none"> <li>• Reduced scale formation</li> <li>• Efficient water heating</li> </ul>	<ul style="list-style-type: none"> <li>• Energy savings/lower operational costs</li> <li>• Increased equipment life span</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces maintenance and downtime</li> </ul>
Laundries	<ul style="list-style-type: none"> <li>• Lower labor and maintenance costs</li> <li>• Increased equipment life span</li> </ul>	<ul style="list-style-type: none"> <li>• Patients, visitors, and employees enjoy brighter whiter, and softer linens</li> <li>• Less detergent usage</li> </ul>	<ul style="list-style-type: none"> <li>• Increased textile life</li> <li>• Lowers rewash rate</li> <li>• Expected overall savings between 15% and 30%</li> </ul>
Research Laboratories and Sterilization	<ul style="list-style-type: none"> <li>• Pure water provides consistency in lab experiments and for sterilization of equipment in autoclaves</li> </ul>	<ul style="list-style-type: none"> <li>• Lower equipment maintenance costs</li> <li>• Increased equipment life span</li> </ul>	<ul style="list-style-type: none"> <li>• No risk of poor quality water contaminating equipment</li> <li>• Keeps medical instruments clean and spot free</li> </ul>
Ice and vending machines	<ul style="list-style-type: none"> <li>• Better tasting ice cubes and beverages</li> <li>• Reduced utility bills</li> </ul>	<ul style="list-style-type: none"> <li>• Increased equipment life span</li> <li>• Lower maintenance and operating costs</li> </ul>	<ul style="list-style-type: none"> <li>• Improved operational efficiency</li> </ul>
Water for cafeteria, foodservice or the entire facility	<ul style="list-style-type: none"> <li>• Drinking water that exceeds EPA requirements</li> <li>• Endless supply of great tasting drinking water</li> <li>• Saved costs with the option of simplified billing</li> <li>• Option of Bottled Water, Point-of-Use filtration, or a centralized source RO system</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced utility bills and increase equipment life span</li> <li>• Less money spent on soaps and chemicals</li> <li>• Lowered maintenance and operating costs</li> <li>• Reduced labor costs</li> </ul>	<ul style="list-style-type: none"> <li>• Money saved on detergent use and easier to clean equipment</li> <li>• Spot-free tableware</li> <li>• Great tasting food and beverages</li> </ul>

### CASE IN POINT #1:

**The problem:** a full facility hospital near the North Eastern Seaboard needed to provide purified water for their lab experiments, testing and instrument wash systems. This facility called Culligan.

**The solution:** After analyzing their requirements, Culligan applied a multi-stage Reverse Osmosis system consisting of a water softener, carbon filter and A-Series RO unit. With this system in place, all dissolved solids are removed from the water, ensuring accurate tests for the lab and clean, spot-free instruments for the entire facility.

### CASE IN POINT #2:

Hard water was playing hard ball with a 110-bed continuing care facility located near the North Eastern Seaboard of the United States. After experiencing years of the damaging and costly effects of hard water on boilers, fixtures, dishwashers, laundry and tiled surfaces, this facility needed a solution. Culligan assessed the situation and applied a Triplex HiFlo 3e Progressive Flow Water Softener to provide seamless 24/7 soft water to the entire facility. This immediately eliminated the hardness scale.

**The results:** Reduced maintenance costs, improved wash quality and significantly reduced operating expenses. By including a Brine Reclaim system, this client regularly saves an additional 30% or more on salt consumption.

### A Partner in Performance

As your single source for water treatment solutions, Culligan Commercial can be your partner in reducing operational costs while improving the productivity and performance of your facility. A health bottom line is our priority.

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## Commercial Hospitality/Lodging Solutions



### Culligan Commercial. At your Service.

In no other industry are superior service and an unparalleled customer experience more important than in hospitality. Upholding your high standards are products and services that add value and quality to your entire operation. And that begins with the quality of your water.

Culligan Commercial has the experience and capabilities to bring you high caliber water treatment solutions that can impact your operation and your bottom line.

#### WATER TREATMENT USES:

BOILER/HOT WATER PRE-TREATMENT  
COOLING TOWERS & CHILLERS  
FOOD SERVICE  
LAUNDRY FACILITIES  
VENDED SERVICES

#### SPECIALIZING IN THE APPLICATION OF:

WATER SOFTENING  
MICRON SEDIMENT FILTRATION  
CARBON & BEVERAGE FILTRATION  
REVERSE OSMOSIS & UV STERILIZATION

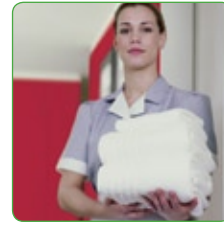


#### You can expect the following benefits:

- Reduce utility bills
- Increase equipment life span
- Cost savings on chemicals and detergents
- Lower equipment maintenance costs
- Reduced operating costs

With global and local experience, engineers and technical experts, and equipment designed and manufactured in our own facilities, it's clear that Culligan earns the highest marks in the industry.

*"I would estimate that we save 30-35% on our detergent and chemical costs when we use soft water."*  
**Gerald Gleckman, Laundry Engineer, Four Seasons Resort and Club, Dallas, Texas**



## Overflowing with advantages.

Whether you operate a full-service or limited-service facility, Culligan Commercial has the right mix of water treatment solutions to deliver efficiency and savings for your business and an enhanced experience for your customers. Our team of local water industry experts is ready to listen to your needs and respond with a complete water analysis, equipment recommendations, installation and ongoing service.

## CASE IN POINT: Four Seasons Resort and Club, Dallas, Texas

As the only 5-Diamond rated hotel in Texas, Four Seasons had a reputation for superior quality and service. In order to maintain their upscale appeal Gerald Gleckman, the Laundry Engineer of the resort contacted Culligan Commercial noting an appreciation of Culligan’s reputation for quality equipment and service.

**The problem:** With a poor quality softener, the system was inefficient, had non-functioning valves, and required constant maintenance. In addition, the boiler had to be frequently descaled—up to six 5-gallon buckets at a time. Severe scaling had also reduced their 2” copper line to an internal diameter of only ½”. The net effect was an increase in labor costs and high energy consumption, both resulting in a problematic and ineffective water treatment system.

**The solution:** After analyzing the situation it was clear that the property’s old softener needed to be replaced. A Culligan Duplex Alternating Water Softener was installed for the laundry, completely eliminating hard water.

**The results:** “I would estimate that we save 30-35% on our detergent and chemical costs when we use soft water,” Mr. Gleckman said. Today, Four Seasons has only a half bucket of scale versus the six 5-gallon buckets they had previously. Other results include reduced scale build-up and salt usage, brighter and softer linens, and the water heaters recover more quickly. “I have been in discussions where industry people say soft water can extend the life of our linens by 40%. I think these numbers are realistic based on our experience,” noted a pleased Mr. Gleckman.

Culligan water brings benefits to your customers that will delight all of their senses:

- Brighter, whiter and softer linens
- Better tasting ice cubes, beverages, and food
- Clear, great tasting drinking water.

Solutions from Culligan Commercial are designed to eliminate your costly water problems while improving the performance and efficiency of your current operation. We look forward to engineering a success story for you.

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## Commercial Education Solutions



### Culligan Commercial. A smart choice.

Once you examine the facts, you'll see that Culligan Commercial has the right answers for all your water process questions. With global and local experience, engineers and technical experts, and equipment designed and manufactured in our own facilities, it's clear that Culligan earns the highest marks in the industry.

Our team of local water industry experts is ready to listen to your needs and respond with a complete water analysis, equipment recommendations, installation and ongoing service.

#### WATER TREATMENT USES:

- BOILER/HOT WATER PRE-TREATMENT
- COOLING TOWERS & CHILLERS
- FOOD SERVICE/BEVERAGE & ICE FILTRATION
- ATHLETIC PROGRAMS
- CUSTOM TEACHING FACILITIES (I.E. SCIENCE LABS)

#### SPECIALIZING IN THE APPLICATION OF:

- WATER SOFTENING & DEALKALIZATION
- CARBON & SEDIMENT FILTRATION
- REVERSE OSMOSIS
- DEIONIZATION & UV STERILIZATION

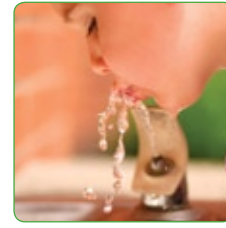


#### We can help you:

- Reduce utility bills
- Increase equipment life span
- Save money on chemicals and detergents
- Reduce labor, operating and maintenance costs
- Offer option of bottled water, point-of-use, or a centralized source Reverse Osmosis system
- Provide high-quality water for consistency in lab experiments
- Eliminate scale build-up in dish machines, water heaters & pipes

*"In labs supplied with Culligan® equipment, incidents of poor quality water contaminating an experiment are all but nonexistent."*

**Facilities Engineer, State University, Oregon**



## Where will you use Culligan?

From K-12 to Universities, a partner like Culligan Commercial can meet the most stringent water standards.

Requirement	Culligan Result		
Make-up water for boilers or cooling towers Facility use portable water (restrooms, etc.)	<ul style="list-style-type: none"> <li>• Reduced scale formation</li> </ul>	<ul style="list-style-type: none"> <li>• Increased equipment life span</li> </ul>	<ul style="list-style-type: none"> <li>• Energy savings</li> </ul>
Laundries	<ul style="list-style-type: none"> <li>• Lower labor, detergent and maintenance costs</li> <li>• Increased equipment life span</li> </ul>	<ul style="list-style-type: none"> <li>• Patients, visitors, and employees enjoy brighter whiter, and softer linens</li> </ul>	<ul style="list-style-type: none"> <li>• Increased textile life</li> <li>• Expected overall savings between 15% and 30%</li> </ul>
Classrooms and Research Laboratories and Sterilization	<ul style="list-style-type: none"> <li>• Pure water provides consistency in lab experiments</li> <li>• Lower equipment maintenance costs</li> </ul>	<ul style="list-style-type: none"> <li>• Increased equipment life span</li> </ul>	<ul style="list-style-type: none"> <li>• No risk of poor quality water contaminating equipment</li> </ul>
Ice and vending machines	<ul style="list-style-type: none"> <li>• Better tasting ice cubes and beverages</li> <li>• Increased equipment life span</li> </ul>	<ul style="list-style-type: none"> <li>• Lower utility, maintenance and operating costs</li> </ul>	<ul style="list-style-type: none"> <li>• Improved operational efficiency</li> </ul>
Water for cafeteria, foodservice or the entire facility	<ul style="list-style-type: none"> <li>• Drinking water that exceeds EPA requirements</li> <li>• Saved time with the option of simplified billing</li> <li>• Option of Bottled Water, Point-of-Use filtration, or a centralized source RO system</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced utility, soap, chemical, labor, maintenance and operating costs</li> <li>• Increased equipment life span</li> </ul>	<ul style="list-style-type: none"> <li>• Spot-free tableware</li> <li>• Great tasting food and beverages</li> </ul>

### CASE IN POINT:

When a Science Center at a southern Florida university needed superior water quality for their bioresearch, they called Culligan. After analysis, Culligan recommended a depth, carbon, ultraviolet light and Reverse Osmosis system. The BP-S Reverse Osmosis was installed and the Science Center had the consistent, high purity water needed for their bioresearch.

### A Partner in Performance

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Learn more about RV showers and tubs we have.