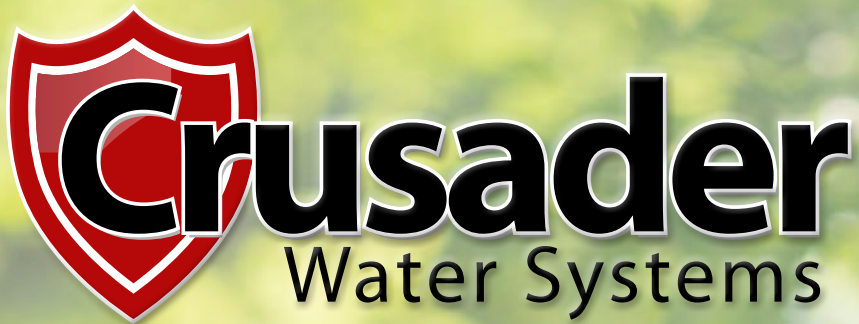


Crusader

Water Systems



2021
Catalog



Iron & Heavy Metals: Even after your water leaves the city plant and meets or exceeds EPA minimum standards, it can absorb and collect contaminants such as copper, zinc, lead, rust, and manganese before it reaches your home. These metals can be harmful to humans, but they are always harmful to your water system unless it is specifically designed to properly address these threats. Crusader Systems are designed to address a broad spectrum of metallic challenges.

High Water Hardness: The harder your water is, the larger your system must be to remove contaminants effectively. If your system is too large, it will waste water and salt, and it may become contaminated with bacteria. If your system is too small, it will fail to process all the hardness from the water, which can impede water flow. Crusader systems work well -- even at extremely high hardness levels and water flow rates.

Fluctuating Water Chemistry: Water hardness and heavy-metal levels will fluctuate over time, which causes inconsistent water quality and forces regular systems to use excessive amounts of salt to clean themselves. Crusader's high-efficiency twin technology solves that problem and delivers a virtually unlimited supply of good water while saving on salt and water.

Heterotrophic Plate Count Bacteria (HPC's): Your city produces water that is free of bacteria and safe to consume. HPC's can live in piping, water meters, fittings, and regulating valves. While HPC's are benign, they can be a home for pathogenic bacteria. HPC's can grow and colonize in a water system in as little as four days -- even with chlorine or chloramine in the water. Our systems are specifically designed to use ProGuard or ProGuard Plus and appropriate cleaning cycles to minimize this risk and keep your water clean.

Why is Crusader the Best Choice?



Water Softeners



Crusader Professional

The Crusader Pro series of Commercial Water Softeners is suitable for applications up to 130,000 grains of hardness reduction capacity at peak flow rates of up to 28 gpm.

Operation of the Softener

Hard water contains dissolved minerals in the form of Calcium (Ca), Magnesium (Mg), Iron (Fe), Copper (Cu), & Zinc (Zn). Reduction of these contaminants is accomplished by softening the water through an ion-exchange process. As water flows through the mineral tank, the dissolved minerals become attached onto and inside the resin. Over a period of time the resin will become saturated with contaminants, and the softener will require regeneration using a sodium or potassium brine solution.

Softening Media - AquaPro 500-1 Hybrid

The exchange media is a high quality, FDA certified, commercial-grade strong acid (Cation) Functional Matrix resin with a very high whole bead count and no color throw. It is physically hard and is moderately chlorine resistant. The media combines high operating capacity with excellent chemical and physical stability for a long, dependable life.

Controller/Meter

Regeneration of the system is initiated by a simplified digital controller, which electronically meters softened water flow and makes decisions to regenerate based on water consumption and program settings. Salt dosage is controlled differentially to maximize the softener's efficiency.

Regeneration

These softener models are controlled electronically. A fully programmable microprocessor controls Tank Fill, Percolation, Ion Exchange, Backwash, Rapid Rinse and Return-to-Service cycles.

Control Valve

A hydraulically balanced and coated piston slides effortlessly through seals & spacers. All parts in the waterway are either coated brass or composite Noryl® materials to ensure a long and reliable service life.

Resin Tank

All softener models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100. All fiberglass tanks carry a limited lifetime warranty.

Brine Tank

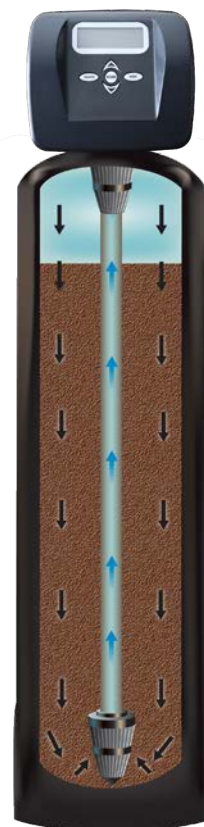
A high capacity brine tank is included as part of this system. The brine tank is a combination of a brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required.

Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine needed for each regeneration. The brine system has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard & ProGuard Plus

A ProGuard reservoir is included with this system to ensure peak performance, maximize efficiency, and provide the highest level of protection from inorganic metals and minerals.



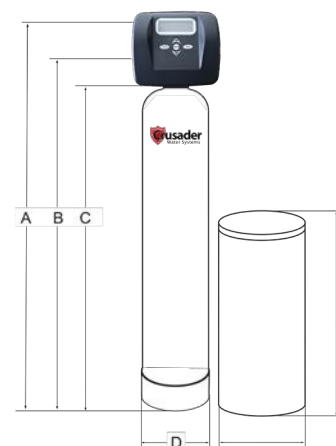
Commercial Water Softener



Operating Pressure: 40 - 80 psi

Water Temperature: 40 - 80°F

Max Inlet Pipe Size: 1"



Crusader Professional

	CS-B-35	CS-B-50	CS-B-72	CS-B-96	CS-B-130
Maximum Capacity (Grains - CaCo3)	35,000	50,000	72,000	96,000	130,000
Default Capacity (Grains - CaCo3)*	28,400	42,600	56,800	85,200	113,600
High Efficiency Capacity (Grains - CaCo3)	22,000	33,000	44,000	66,000	88,000
Maximum Salt Used Per Cleaning (lbs)	15	22	30	45	60
Default Salt Used Per Cleaning (lbs)	9	14	18	27	36
High Efficiency Salt Used Per Cleaning (lbs)	6	9	12	18	24
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	21	22	23	25	28
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	13	14	16	20	25
Dimension A - Overall System Height	62"	62"	60"	62"	73"
Dimension B - System Piping Height	56.09"	56.09"	54.09"	56.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	52"	54"	65"
Dimension D - Pressure Vessel Diameter	10"	10"	12"	13"	14"
Brine Tank Dimensions (L x W x H) (Inches)	14 x 14 x 34	14 x 14 x 34	18 x 40	18 x 40	24 x 50
Total Space Required (L x W x H) (Inches)	14 x 25 x 62	14 x 25 x 62	18 x 32 x 60	18 x 33 x 62	24 x 50 x 73
Shipping Weight (lbs)	90	115	180	240	325

*Factory Settings

www.crusaderwater.com

Crusader Deluxe

The Crusader Deluxe series of Commercial Water Softeners is suitable for applications up to 150,000 grains of hardness reduction capacity at peak flow rates of up to 28 gpm.

Operation of the Softener

Hard water contains dissolved minerals and metals in the form of Calcium (Ca), Magnesium (Mg), Iron (Fe), Copper (Cu), & Zinc (Zn). Reduction of these contaminants is accomplished by softening the water through an ion-exchange process. As water flows through the mineral tank, the contaminants become attached onto and inside the resin. Over a period of time, the resin will become saturated with contaminants, and the softener will require regeneration using a sodium or potassium brine solution.

Softening Media - AquaPro 500-2 Hybrid

The exchange media is a high quality, FDA certified, commercial-grade strong acid hybrid (Cation) Functional Matrix resin with a very high whole bead count and no color throw. It's physically hard and is moderately chlorine resistant. Hybrid media is engineered to encompass all the attributes of 500-1 softening media in addition to leveraging all functions of 500-2 Conditioning media when working together with ProGuard or ProGuard Plus. The media combines high operating capacity with excellent chemical and physical stability for a long, dependable life. An NSF-approved clarifying media is included to provide crystal-clear water. Food-grade gravel under-bedding ensures uniform flow, minimal pressure drop, and excellent performance.

Controller/Meter

Regeneration of the system is initiated by a simplified digital control, which electronically meters softened water flow and makes decisions to regenerate based on water consumption and program settings. Salt dosage is controlled differentially to maximize the softener's efficiency.

Regeneration

These softener models are controlled electronically. A fully programmable microprocessor controls Tank Fill, Percolation, Ion Exchange, Double Backwash, Rapid Rinse, and Return-to-Service cycles.

Control Valve

A hydraulically balanced and coated piston slides effortlessly through seals & spacers. All parts in the water-way are either coated brass or composite Noryl® materials to ensure a long and reliable service life.

Resin Tank

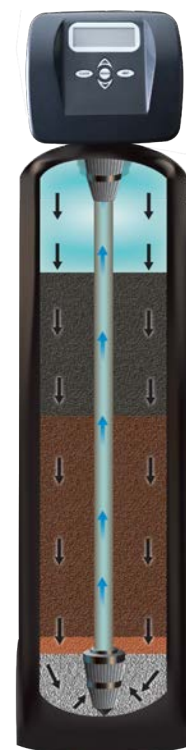
All softener models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100. All fiberglass tanks carry a limited lifetime warranty.

Brine Tank

A high capacity brine tank is included as part of this system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required. Brine tanks 24" diameter and smaller feature a grid plate for maximum saturation of brine.

Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.



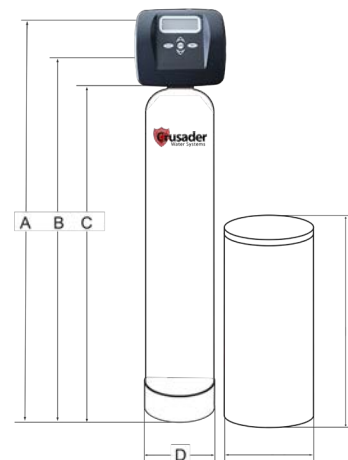
Commercial Water Softener



Operating Pressure: 40 - 80 psi

Water Temperature: 40 - 80°F

Max Inlet Pipe Size: 1"



Crusader Deluxe

	CS-D-35	CS-D-50	CS-D-72	CS-D-96	CS-D-130
Maximum Capacity (Grains-CaCo ₃)	35,000	50,000	72,000	96,000	130,000
Default Capacity (Grain-CaCo ₃)*	28,400	42,600	56,800	85,200	113,600
High Efficiency Capacity (Grains-CaCo ₃)	22,000	33,000	44,000	66,000	88,000
Maximum Salt Used Per Cleaning (lbs)	15	22	30	45	60
Default Salt Used Per Cleaning (lbs)	9	14	18	27	36
High Efficiency Salt Used Per Cleaning (lbs)	6	9	12	18	24
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	21	22	23	25	28
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	13	14	16	20	25
Dimension A - Overall System Height	62"	62"	60"	62"	73"
Dimension B - System Piping Height	56.09"	56.09"	54.09"	56.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	52"	54"	65"
Dimension D - Pressure Vessel Diameter	10"	10"	12"	13"	14"
Brine Tank Dimensions (L x W x H) (Inches)	14 x 14 x 34	14 x 14 x 34	18 x 40	18 x 40	24 x 50
Total Space Required (L x W x H) (Inches)	14 x 25 x 62	14 x 25 x 62	18 x 32 x 60	18 x 33 x 62	24 x 40 x 73
Shipping Weight (lbs)	100	130	200	245	350

*Factory Settings

www.crusaderwater.com

Crusader Enhanced

The Crusader Enhanced Water Filtration system is designed to address hardness, heavy metals, pesticides, herbicides, and chlorine tastes & odors in microbiologically safe water at flow rates up to 28 gpm.

Operation of the Filtration System

Hard water can contain dissolved minerals in the form of Calcium (Ca), Magnesium (Mg), and metals such as Iron (Fe), Copper (Cu), Lead (Pb), Nickel (Ni), Zinc (Zn), Lithium (Li) and other inorganics. Chemical Pesticides, Herbicides, Chlorine, & Chloramine with their disinfectant byproducts can also be found in safe city water. Reduction of these contaminants is accomplished by conditioning & filtering the water through a sophisticated ion-exchange process as well as catalysis, absorption, adsorption, and physical filtration.

Filtration Media - AquaPro 500-3a, ChlorZorb, & Catalytic Activator

The exchange media is a high quality, FDA certified, commercial-grade strong acid cation Functional Matrix filtration media with a very high whole bead count and no color throw. It is physically hard and is extremely resistant to chlorine oxidation, fouling, and attrition. 500-4 filtration media is designed to work together with ProGuard & ProGuard Plus performance enhancers to synergistically function at peak efficiency levels and provide you with the water quality, taste, & feel that you desire. The media combines high operating capacity with excellent chemical and physical stability to ensure a long, dependable life. ChlorZorb & the catalytic activator work together in synergy to effectively address chlorine, chloramine, pesticides, herbicides, tastes, odors, and disinfection byproducts. These media are further activated by ProGuard & ProGuard Plus, which maintains a bacteriostatic environment.

Controller/Meter

Regeneration of the system is initiated by a sophisticated electronic control timer, which precisely meters filtered water flow and makes decisions to regenerate based on measured water consumption, elapsed time, and other program settings.

Regeneration & Control Valve

A fully programmable microprocessor controls Tank Fill, Percolation, Backwash, Ion Displacement, Backwash, Vortex Rinse, and Return-to-Service cycles. This ensures that water quality meets specifications. A hydraulically balanced, self-cleaning piston utilizes a composite drivetrain and high-resolution optical encoder. All parts in the waterway are either coated brass or composite Noryl® materials to ensure long and reliable service life.

Media Tank

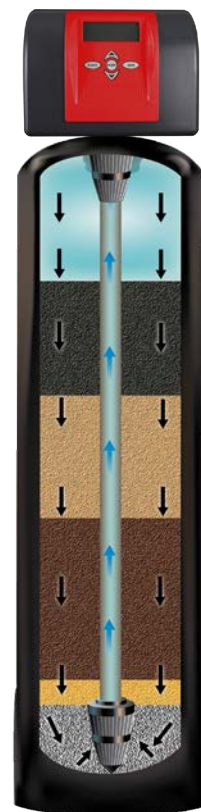
All models feature a non-corrosive fiberglass media tank with a one-piece thermoplastic inner liner. The tanks are approved by NSF, UL, and the FDA. They also meet WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty.

Brine Tank & Brine System

The high capacity brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required. Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration cycle. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard

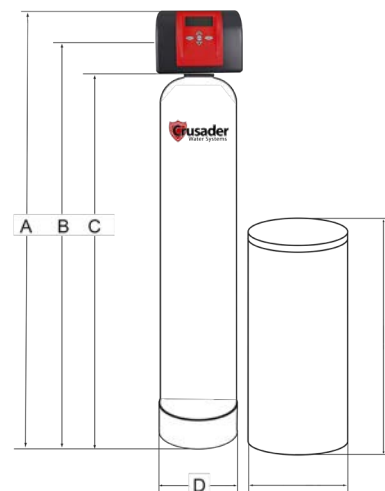
A high efficiency ProGuard reservoir is included with this system to ensure peak performance, maximize efficiency, and provide the highest level of protection from inorganic metals and minerals.



Commercial Water Softener & Filter



Maximum Piping Size - 1"
 Water Temperature - 40 - 80°F
 Water Pressure - 40 - 80 psi



Crusader Enhanced Water System

	CS-E-35	CS-E-50	CS-E-72	CS-E-96	CS-E-130
Maximum Capacity (Grains-CaCo ₃)	35,000	50,000	72,000	96,000	130,000
Default Capacity (Grains-CaCo ₃)*	28,400	42,600	56,800	85,200	113,600
High Efficiency Capacity (Grains-CaCo ₃)	22,000	33,000	44,000	66,000	88,000
Maximum Salt Used Per Cleaning (lbs)	15	22	30	45	60
Default Salt Used Per Cleaning (lbs)	9	14	18	27	36
High Efficiency Salt Used Per Cleaning (lbs)	6	9	12	18	24
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	21	22	23	25	28
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	13	14	16	20	25
Dimension A - Overall System Height	62"	62"	62"	73"	73"
Dimension B - System Piping Height	56.09"	56.09"	56.09"	67.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	54"	65"	65"
Dimension D - Pressure Vessel Diameter	10"	13"	13"	16"	18"
Brine Tank Dimensions (L x W x H) (Inches)	14 x 14 x 34	15 x 17 x 36	18 x 40	18 x 40	24 x 50
Total Space Required (L x W x H) (Inches)	14 x 25 x 62	14 x 25 x 62	18 x 32 x 60	18 x 35 x 62	24 x 44 x 73
Shipping Weight (lbs)	115	145	215	270	375

*Factory Settings

www.crusaderwater.com

Crusader Twin 1"

The Crusader Twin series of Commercial Water Softeners is suitable for applications up to 192,000 grains of hardness reduction capacity at peak flow rates of up to 25 gpm.

Operation of the Softener

Hard water contains dissolved minerals in the form of Calcium (Ca), Magnesium (Mg), Iron (Fe), Copper (Cu), & Zinc (Zn). Reduction of these contaminants is accomplished through an ion-exchange process. As water flows through the mineral tank, ions attach onto and inside the resin. Over time, the resin will become saturated with contaminants, and the softener will require regeneration using a sodium or potassium brine solution.

Softening Media - AquaPro 500-2

Exchange media is a high quality, FDA certified, commercial-grade strong acid cation Functional Matrix resin with a very high whole bead count and no color throw. It's physically hard and is moderately chlorine resistant. The media combines high operating capacity with excellent chemical and physical stability for a long, dependable life.

Controller/Meter

Regeneration of the system is initiated by a simplified electronic control timer, which electronically meters softened water flow and makes decisions to regenerate based on water consumption and program settings.

Regeneration

A fully programmable microprocessor controls Tank Alternation, Upflow Ion Exchange, Backwash, Rapid Rinse, Tank Fill, and Return-to-Service cycles.

Control Valve

Two hydraulically balanced and coated pistons utilize a composite drivetrain. All parts in the waterway are composite Noryl® materials to ensure a long and reliable service life.

Resin Tanks

All softener models feature two non-corrosive fiberglass tanks with one-piece thermoplastic inner liners. Each tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tanks are approved by NSF, UL, and the FDA. They also meet WQA Standard S-100. All fiberglass tanks carry a limited lifetime warranty.

Brine Tank

A high capacity brine tank is included as part of the system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required.

Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration cycle. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard & ProGuard Plus

A ProGuard reservoir is included with this system to ensure peak performance, maximize efficiency, and provide the highest level of protection from inorganic metals and minerals.

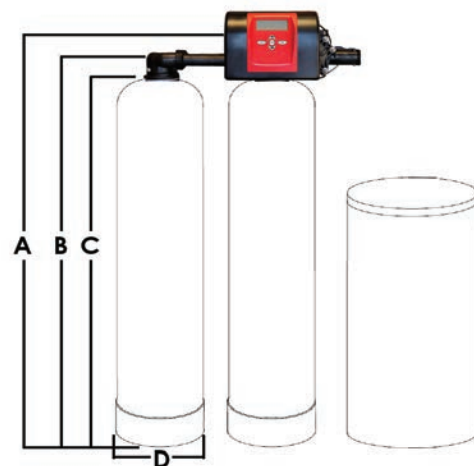
Commercial Water Softener



Operating Pressure: 40 - 80 psi

Water Temperature: 40 - 80°F

Max Inlet Pipe Size: 1"



Crusader Twin 1"

	CS-Twin-1	CS-Twin-2	CS-Twin-3	CS-Twin-4
Maximum Capacity Per Tank (Grains CaCo3)	35,000	50,000	72,000	96,000
Default Capacity Per Tank (Grains CaCo3)*	28,400	42,600	56,800	85,200
High Efficiency Capacity Per Tank (Grains CaCo3)	22,000	33,000	44,000	66,000
Maximum Salt Used Per Regeneration (lbs)	15	22	30	45
Default Salt Used Per Regeneration (lbs)	9	14	18	27
High Efficiency Salt Used Per Regeneration (lbs)	6	9	12	18
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	21	22	23	25
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	13	14	16	20
Dimension A - Overall System Height	62"	62"	60"	62"
Dimension B - System Piping Height	56.09"	56.09"	54.09"	56.09"
Dimension C - Pressure Vessel Height	54"	54"	52"	54"
Dimension D - Pressure Vessel Diameter (each)	10"	10"	12"	13"
Brine Tank Dimensions	14 x 14 x 34	14 x 14 x 34	18 x 40	18 x 40
Total Space Required (L x W x H)	14 x 38 x 62	14 x 38 x 62	18 x 47 x 60	18 x 49 x 62
Shipping Weight (lbs)	165	215	320	460

*Factory Settings

www.crusaderwater.com

Crusader 1.25" Pro

The Crusader 1.25" Pro series of Commercial Water Softeners is suitable for applications up to 130,000 grains of hardness reduction capacity at peak flow rates of up to 30 gpm.

Operation of the Softener

Hard water contains dissolved minerals and metals in the form of Calcium (Ca), Magnesium (Mg), Iron (Fe), Copper (Cu), & Zinc (Zn). Reduction of these contaminants is accomplished by softening the water through an ion-exchange process. As water flows through the mineral tank, the contaminants become attached onto and inside the resin. Over a period of time, the resin will become saturated with contaminants, and the softener will require regeneration using a sodium or potassium brine solution.

Softening Media - AquaPro 500-2 Hybrid

The exchange media is a high quality, FDA certified, commercial-grade strong acid hybrid (Cation) Functional Matrix resin with a very high whole bead count and no color throw. It's physically hard and is moderately chlorine resistant. Hybrid media is engineered to encompass all the attributes of 500-1 softening media and leverage all functions of 500-2 conditioning media when working together with ProGuard or ProGuard Plus. The media combines high operating capacity with excellent chemical and physical stability to ensure a long, dependable life. An NSF-approved clarifying media is included to provide crystal-clear water. Food-grade gravel under-bedding ensures uniform flow, minimal pressure drop, and uniform performance.

Controller/Meter

Regeneration of the system is initiated by a simplified digital control, which electronically meters softened water flow and makes decisions to regenerate based on water consumption and program settings. Salt dosage is controlled differentially to maximize the softener's efficiency.

Regeneration

These softener models are controlled electronically. A fully programmable microprocessor controls Backwash, Ion Exchange, Rapid Rinse, Tank Refill, and Return-to-Service cycles.

Control Valve

A hydraulically balanced and coated piston utilizes a composite drivetrain within a lead-free brass body. All moving parts in the waterway are either coated brass or composite Noryl® materials to ensure long and reliable service life.

Resin Tank

All softener models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100. All fiberglass tanks carry a limited lifetime warranty.

Brine Tank

A high capacity brine tank is included as part of the system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required. Brine tanks 24" diameter and smaller feature a grid plate for maximum saturation of brine.

Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration cycle. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard & ProGuard Plus

A ProGuard reservoir is included with this system to ensure peak performance, maximize efficiency, and provide the highest level of protection from inorganic metals and minerals.

www.crusaderwater.com

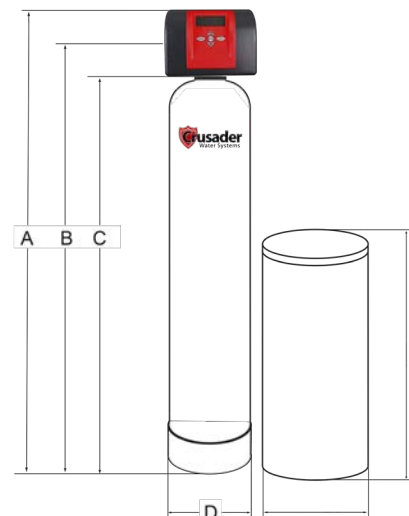
Commercial Water Softener



Operating Pressure: 40 - 80 psi

Water Temperature: 40 - 80°F

Max Inlet Pipe Size: 1.25"



Crusader 1.25" Professional

	CS-B-35HF	CS-B-50HF	CS-B-72HF	CS-B-96HF	CS-B-130HF
Maximum Capacity (Grains CaCo3)	35,000	50,000	72,000	96,000	130,000
Default Capacity (Grains CaCo3)*	28,400	42,600	56,800	85,200	113,600
High Efficiency Capacity (Grains CaCo3)	22,000	33,000	44,000	66,000	88,000
Maximum Salt Used Per Regen (lbs)	15	22	30	45	60
Default Salt Used Per Regen (lbs)	9	14	18	27	36
High Efficiency Salt Used Per Regen (lbs)	6	9	12	18	24
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	30	30	30	30	30
Service Flow Rate @ 55 psi inlet, 15 psi drop	22	22	23	24	25
Dimension A - Overall System Height	62"	62"	60"	62"	73"
Dimension B - System Piping Height	56.09"	56.09"	54.09"	56.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	52"	54"	65"
Dimension D - Pressure Vessel Diameter	10"	10"	12"	13"	14"
Brine Tank Dimensions (L x W x H) (Inches)	14 x 14 x 34	14 x 14 x 34	18 x 40	18 x 40	24 x 50
Total Space Required (L x W x H) (Inches)	14 x 25 x 62	14 x 25 x 62	18 x 32 x 60	18 x 33 x 62	24 x 50 x 73
Shipping Weight (lbs)	90	115	180	240	325

* Factory Settings

www.crusaderwater.com

Crusader 1.25" Deluxe

The Crusader Deluxe 1.25" Series of Commercial Water Softeners is suitable for applications up to 130,000 grains of hardness reduction capacity at peak flow rates of up to 28 gpm.

Operation of the Softener

Hard water contains dissolved minerals and metals in the form of Calcium (Ca), Magnesium (Mg), Iron (Fe), Copper (Cu), & Zinc (Zn). Reduction of these contaminants is accomplished by softening the water through an ion-exchange process. As water flows through the mineral tank, the contaminants become attached onto and inside the resin. Over a period of time, the resin will become saturated with contaminants, and the softener will require regeneration using a sodium or potassium brine solution.

Softening Media - AquaPro 500-2 Hybrid

The exchange media is a high quality, FDA certified, commercial-grade strong acid hybrid (Cation) Functional Matrix resin with a very high whole bead count and no color throw. It's physically hard and is moderately chlorine resistant. Hybrid media is engineered to encompass all the attributes of 500-1 softening media in addition to leveraging all functions of 500-2 Conditioning media when working together with ProGuard or ProGuard Plus. The media combines high operating capacity with excellent chemical and physical stability for a long, dependable life. An NSF-approved clarifying media is included to provide crystal-clear water. Food-grade gravel under-bedding ensures uniform flow, minimal pressure drop, and excellent performance.

Controller/Meter

Regeneration of the system is initiated by a simplified digital control, which electronically meters softened water flow and makes decisions to regenerate based on water consumption and program settings. Salt dosage is controlled differentially to maximize the softener's efficiency.

Regeneration

These softener models are controlled electronically. A fully programmable microprocessor controls Tank Fill, Percolation, Ion Exchange, Double Backwash, Rapid Rinse, and Return-to-Service cycles.

Control Valve

A hydraulically balanced and coated piston slides effortlessly through seals & spacers. All parts in the water-way are either coated brass or composite Noryl® materials to ensure a long and reliable service life.

Resin Tank

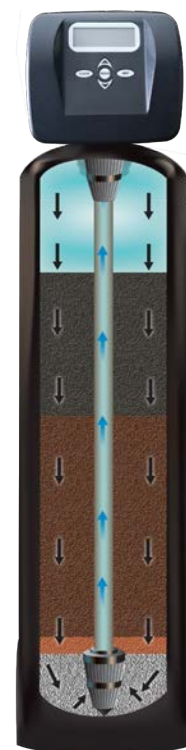
All softener models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100. All fiberglass tanks carry a limited lifetime warranty.

Brine Tank

A high capacity brine tank is included as part of this system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required. Brine tanks 24" diameter and smaller feature a grid plate for maximum saturation of brine.

Brine System

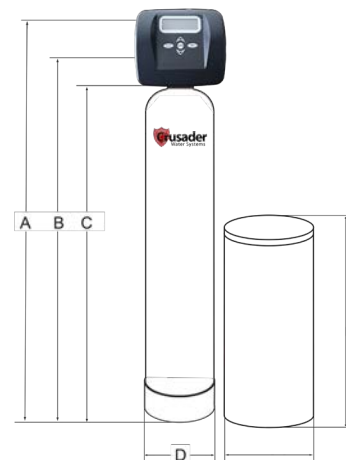
Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.



Commercial Water Softener



Operating Pressure: 40 - 80 psi
Water Temperature: 40 - 80°F
Max Inlet Pipe Size: 1.25"



Crusader 1.25" Deluxe

	CS-D-35HF	CS-D-50HF	CS-D-72HF	CS-D-96HF	CS-D-130HF
Maximum Capacity (Grains-CaCo ₃)	35,000	50,000	72,000	96,000	130,000
Default Capacity (Grain-CaCo ₃)*	28,400	42,600	56,800	85,200	113,600
High Efficiency Capacity (Grains-CaCo ₃)	22,000	33,000	44,000	66,000	88,000
Maximum Salt Used Per Cleaning (lbs)	15	22	30	45	60
Default Salt Used Per Cleaning (lbs)	9	14	18	27	36
High Efficiency Salt Used Per Cleaning (lbs)	6	9	12	18	24
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	21	22	23	25	28
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	13	14	16	20	25
Dimension A - Overall System Height	62"	62"	60"	62"	73"
Dimension B - System Piping Height	56.09"	56.09"	54.09"	56.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	52"	54"	65"
Dimension D - Pressure Vessel Diameter	10"	10"	12"	13"	14"
Brine Tank Dimensions (L x W x H) (Inches)	14 x 14 x 34	14 x 14 x 34	18 x 40	18 x 40	24 x 50
Total Space Required (L x W x H) (Inches)	14 x 25 x 62	14 x 25 x 62	18 x 32 x 60	18 x 33 x 62	24 x 40 x 73
Shipping Weight (lbs)	100	130	200	245	350

*Factory Settings

www.crusaderwater.com

Crusader 1.25" Enhanced

The Crusader 1.25" Enhanced Water Filtration Series is designed to address hardness, heavy metals, pesticides, herbicides, and chlorine tastes & odors in microbiologically safe water at flow rates up to 28 gpm.

Operation of the Filtration System

Hard water can contain dissolved minerals in the form of Calcium (Ca), Magnesium (Mg), and metals such as Iron (Fe), Copper (Cu), Lead (Pb), Nickel (Ni), Zinc (Zn), Lithium (Li) and other inorganics. Chemical Pesticides, Herbicides, Chlorine, & Chloramine with their disinfectant byproducts can also be found in safe city water. Reduction of these contaminants is accomplished by conditioning & filtering the water through a sophisticated ion-exchange process as well as catalysis, absorption, adsorption, and physical filtration.

Filtration Media - AquaPro 500-3a, ChlorZorb, & Catalytic Activator

The exchange media is a high quality, FDA certified, commercial-grade strong acid cation Functional Matrix filtration media with a very high whole bead count and no color throw. It is physically hard and is extremely resistant to chlorine oxidation, fouling, and attrition. 500-4 filtration media is designed to work together with ProGuard & ProGuard Plus performance enhancers to synergistically function at peak efficiency levels and provide you with the water quality, taste, & feel that you desire. The media combines high operating capacity with excellent chemical and physical stability to ensure a long, dependable life. ChlorZorb & the catalytic activator work together in synergy to effectively address chlorine, chloramine, pesticides, herbicides, tastes, odors, and disinfection byproducts. These media are further activated by ProGuard & ProGuard Plus, which maintains a bacteriostatic environment.

Controller/Meter

Regeneration of the system is initiated by a sophisticated electronic control timer, which precisely meters filtered water flow and makes decisions to regenerate based on measured water consumption, elapsed time, and other program settings.

Regeneration & Control Valve

A fully programmable microprocessor controls Tank Fill, Percolation, Backwash, Ion Displacement, Backwash, Vortex Rinse, and Return-to-Service cycles. This ensures that water quality meets specifications. A hydraulically balanced, self-cleaning piston utilizes a composite drivetrain and high-resolution optical encoder. All parts in the waterway are either coated brass or composite Noryl® materials to ensure long and reliable service life.

Media Tank

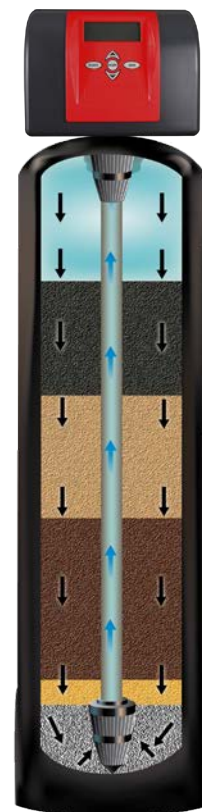
All models feature a non-corrosive fiberglass media tank with a one-piece thermoplastic inner liner. The tanks are approved by NSF, UL, and the FDA. They also meet WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty.

Brine Tank & Brine System

The high capacity brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required. Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration cycle. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard

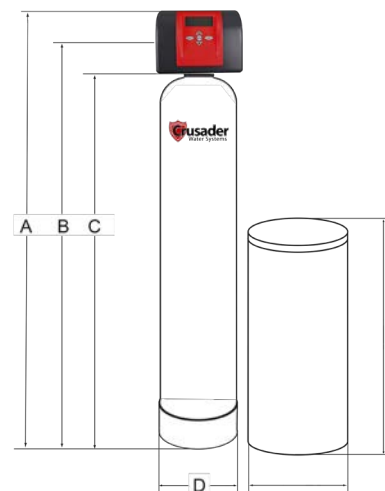
A high efficiency ProGuard reservoir is included with this system to ensure peak performance, maximize efficiency, and provide the highest level of protection from inorganic metals and minerals.



Commercial Water Softener & Filter



Maximum Piping Size - 1.25"
 Water Temperature - 40 - 80°F
 Water Pressure - 40 - 80 psi



Crusader 1.25" Enhanced Water System

	CS-E-35HF	CS-E-50HF	CS-E-72HF	CS-E-96HF	CS-E-130HF
Maximum Capacity (Grains-CaCo ₃)	35,000	50,000	72,000	96,000	130,000
Default Capacity (Grains-CaCo ₃)*	28,400	42,600	56,800	85,200	113,600
High Efficiency Capacity (Grains-CaCo ₃)	22,000	33,000	44,000	66,000	88,000
Maximum Salt Used Per Cleaning (lbs)	15	22	30	45	60
Default Salt Used Per Cleaning (lbs)	9	14	18	27	36
High Efficiency Salt Used Per Cleaning (lbs)	6	9	12	18	24
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	21	22	23	25	28
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	13	14	16	20	25
Dimension A - Overall System Height	62"	62"	62"	73"	73"
Dimension B - System Piping Height	56.09"	56.09"	56.09"	67.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	54"	65"	65"
Dimension D - Pressure Vessel Diameter	10"	13"	13"	16"	18"
Brine Tank Dimensions (L x W x H) (Inches)	14 x 14 x 34	15 x 17 x 36	18 x 40	18 x 40	24 x 50
Total Space Required (L x W x H) (Inches)	14 x 25 x 62	14 x 25 x 62	18 x 32 x 60	18 x 35 x 62	24 x 44 x 73
Shipping Weight (lbs)	115	145	215	270	375

*Factory Settings

www.crusaderwater.com

Crusader 1.5" Pro

The Crusader 1.5 Pro series of Commercial Water Softeners is suitable for applications up to 300,000 grains of hardness reduction capacity at peak flow rates of up to 71 gpm.

Operation of the Softener

Hard water contains dissolved minerals and metals in the form of Calcium (Ca), Magnesium (Mg), Iron (Fe), Copper (Cu), & Zinc (Zn). Reduction of these contaminants is accomplished by softening the water through an ion-exchange process. As water flows through the mineral tank, the contaminants become attached onto and inside the resin. Over a period of time, the resin will become saturated with contaminants, and the softener will require regeneration using a sodium or potassium brine solution.

Softening Media - AquaPro 500-2 Hybrid

The exchange media is a high quality, FDA certified, commercial-grade strong acid hybrid (Cation) Functional Matrix resin with a very high whole bead count and no color throw. It's physically hard and is moderately chlorine resistant. Hybrid media is engineered to encompass all the attributes of 500-1 softening media and leverage all functions of 500-2 conditioning media when working together with ProGuard or ProGuard Plus. The media combines high operating capacity with excellent chemical and physical stability to ensure a long, dependable life. An NSF-approved clarifying media is included to provide crystal-clear water. Food-grade gravel under-bedding ensures uniform flow, minimal pressure drop, and uniform performance.

Controller/Meter

Regeneration of the system is initiated by a simplified digital control, which electronically meters softened water flow and makes decisions to regenerate based on water consumption and program settings. Salt dosage is controlled differentially to maximize the softener's efficiency.

Regeneration

These softener models are controlled electronically. A fully programmable microprocessor controls Backwash, Ion Exchange, Rapid Rinse, Tank Refill, and Return-to-Service cycles.

Control Valve

A hydraulically balanced and coated piston utilizes a composite drivetrain within a lead-free brass body. All moving parts in the waterway are either coated brass or composite Noryl® materials to ensure long and reliable service life.

Resin Tank

All softener models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100. All fiberglass tanks carry a limited lifetime warranty.

Brine Tank

A high capacity brine tank is included as part of the system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required. Brine tanks 24" diameter and smaller feature a grid plate for maximum saturation of brine.

Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration cycle. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard & ProGuard Plus

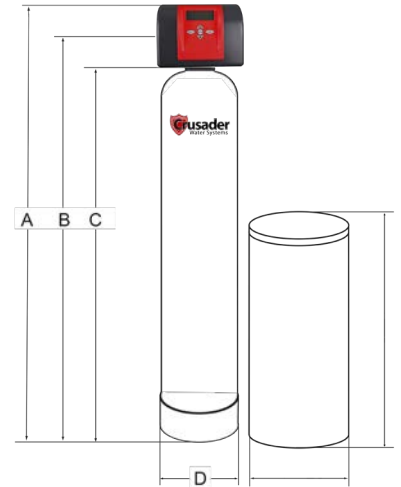
A ProGuard reservoir is included with this system to ensure peak performance, maximize efficiency, and provide the highest level of protection from inorganic metals and minerals.

www.crusaderwater.com

Commercial Water Softener



Maximum Piping Size - 1.5"
 Water Temperature - 40 - 80°F
 Water Pressure - 40 - 80 psi



Crusader 1.5" Professional

	CS15-90	CS15-120	CS15-150	CS15-180	CS15-210	CS15-240	CS15-270	CS15-300
Maximum Capacity (Grains - CaCo ₃)	90,000	120,000	150,000	180,000	210,000	240,000	270,000	300,000
High Efficiency Capacity (Grains - CaCo ₃)	72,000	96,000	120,000	144,000	168,000	192,000	216,000	240,000
Maximum Salt Used Per Regen (lbs)	45	60	75	90	105	120	135	150
High Efficiency Salt Used Per Regen (lbs)	24	32	40	48	56	64	72	80
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	46	51	67	65	64	71	69	68
Service Flow Rate (gpm) @ 55 ps inlet, 15 psi drop	35	40	52	51	50	55	54	53
Dimension A - Overall System Height	78"	78"	75"	75"	75"	84"	84"	84"
Dimension B - System Piping Height	~74"	~74"	~71"	~71"	~71"	~80"	~80"	~80"
Dimension C - Pressure Vessel Height	65"	65"	62"	62"	62"	72"	72"	72"
Dimension D - Pressure Vessel Diameter	14"	16"	21"	21"	21"	24"	24"	24"
Brine Tank Dimensions (L x W x H) (Inches)	24 x 50	24 x 50	24 x 50	24 x 50	24 x 50	30 x 50	30 x 50	30 x 50
Total Space Required (L x W x H) (Inches)	24 x 42 x 78	24 x 44 x 78	24 x 49 x 75	24 x 49 x 75	24 x 49 x 75	30 x 58 x 84	30 x 58 x 84	30 x 58 x 84

*Factory Settings

www.crusaderwater.com

Crusader 2" Pro

The Crusader 2" Pro series of Commercial Water Softeners is suitable for applications up to 1,200,000 grains of hardness reduction capacity at peak flow rates of up to 127 gpm per tank.

Operation of the Softener

Hard water contains dissolved minerals and metals in the form of Calcium (Ca), Magnesium (Mg), Iron (Fe), Copper (Cu), & Zinc (Zn). Reduction of these contaminants is accomplished by softening the water through an ion-exchange process. As water flows through the mineral tank, the contaminants become attached onto and inside the resin. Over a period of time, the resin will become saturated with contaminants, and the softener will require regeneration using a sodium or potassium brine solution.

Softening Media - AquaPro 500-2 Hybrid

The exchange media is a high quality, FDA certified, commercial-grade strong acid hybrid (Cation) Functional Matrix resin with a very high whole bead count and no color throw. It's physically hard and is moderately chlorine resistant. Hybrid media is engineered to encompass all the attributes of 500-1 softening media and leverage all functions of 500-2 conditioning media when working together with ProGuard or ProGuard Plus. The media combines high operating capacity with excellent chemical and physical stability to ensure a long, dependable life. An NSF-approved clarifying media is included to provide crystal-clear water. Food-grade gravel under-bedding ensures uniform flow, minimal pressure drop, and uniform performance.

Controller/Meter

Regeneration of the system is initiated by a simplified digital control, which electronically meters softened water flow and makes decisions to regenerate based on water consumption and program settings. Salt dosage is controlled differentially to maximize the softener's efficiency.

Regeneration

These softener models are controlled electronically. A fully programmable microprocessor controls Tank Fill, Percolation, Ion Exchange, Double Backwash, Rapid Rinse, and Return-to-Service cycles. Cycle sequences will vary based upon field configuration.

Control Valve

A hydraulically balanced and coated piston slide effortlessly through chlorine-resistant seals & spacers. All moving parts in the waterway are either coated brass or composite Noryl® materials to ensure a long and reliable service life.

Resin Tank

All softener models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100. All fiberglass tanks carry a limited lifetime warranty.

Brine Tank

A robust brine tank is included as part of the system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required.

Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration cycle. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard & ProGuard Plus

A ProGuard reservoir is included with this system to ensure peak performance, maximize efficiency, and provide the highest level of protection from inorganic metals and minerals.

www.crusaderwater.com

Commercial Water Softener

Crusader 2" Pro Softener

Maximum Piping Size - 2"

Water Temperature - 40 - 80°F

Water Pressure - 40 - 80 psi



- Lead-Free Brass
- Single Piston Design
- Onboard Relay Options
- Disinfectant Coating
- No Hard Water Bypass
- Brine-Pit Controls Available
- Simplex, Series, or Parallel Service
- Differential Brining (Single Tank Models)
- Easily Network up to 6 Systems
- Field-Upgradeable Software
- Motor Activated Valves Available

www.crusaderwater.com

Crusader 2" Pro Models

	CS2-120	CS2-150	CS2-180	CS2-210	CS2-240	CS2-270
Maximum Capacity (Grains - CaCo3)	120,000	150,000	180,000	210,000	240,000	270,000
High Efficiency Capacity (Grains - CaCo3)	96,000	120,000	144,000	168,000	192,000	216,000
Maximum Salt Used Per Regen (lbs)	60	75	90	105	120	135
High Efficiency Salt Used Per Regen (lbs)	32	40	48	56	64	72
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	60	94	91	85	98	96
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	47	72	70	66	76	74
Dimension A - Overall System Height	78	78	75	75	84	84
Dimension B - System Piping Height	~74	~74	~71	~71	~80	~80
Dimension C - Pressure Vessel Height	65	65	62	62	72	72
Dimension D - Pressure Vessel Diameter	16	18	21	21	24	24
Brine Tank Dimensions (L x W) (Inches)	24 x 50	24 x 50	24 x 50	24 x 50	30 x 50	30 x 50
Total Space Required (L x W x H) (Inches)	24 x 44 x 78	24 x 46 x 78	24 x 49 x 75	24 x 49 x 75	30 x 58 x 84	30 x 58 x 84

*Factory Settings

Commercial Water Softener

	CS2-300	CS2-450	CS2-600	CS2-750	CS2-900	CS2-1200
Maximum Capacity (Grains - CaCo ₃)	300,000	450,000	600,000	750,000	900,000	1,200,000
High Efficiency Capacity (Grains - CaCo ₃)	240,000	360,000	480,000	600,000	720,000	960,000
Maximum Salt Used Per Regen (lbs)	150	225	300	375	450	600
High Efficiency Salt Used Per Regen (lbs)	80	120	160	200	240	320
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	94	109	119	127	120	127
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	73	84	93	98	96	98
Dimension A - Overall System Height	84	92	93	93	93	93
Dimension B - System Piping Height	~80	~88	~89	~89	~89	~89
Dimension C - Pressure Vessel Height	72	72	72	72	72	72
Dimension D - Pressure Vessel Diameter	24	30	36	42	42	48
Brine Tank Dimensions (L x W) (Inches)	30 x 50	39 x 48	39 x 48	42 x 60	50 x 60	50 x 60
Total Space Required (L x W x H) (Inches)	30 x 58 x 84	39 x 73 x 92	39 x 79 x 93	42 x 89 x 93	50 x 96 x 93	50 x 102 x 93

*Factory Settings

Crusader 3" Pro

The Crusader 3" Pro series of Commercial Water Softeners is suitable for applications up to 2,100,000 grains of hardness reduction capacity at peak flow rates of up to 270 gpm per tank.

Operation of the Softener

Hard water contains dissolved minerals and metals in the form of Calcium (Ca), Magnesium (Mg), Iron (Fe), Copper (Cu), & Zinc (Zn). Reduction of these contaminants is accomplished by softening the water through an ion-exchange process. As water flows through the mineral tank, the contaminants become attached onto and inside the resin. Over a period of time, the resin will become saturated with contaminants, and the softener will require regeneration using a sodium or potassium brine solution.

Softening Media - AquaPro 500-2 Hybrid

The exchange media is a high quality, FDA certified, commercial-grade strong acid hybrid (Cation) Functional Matrix resin with a very high whole bead count and no color throw. It's physically hard and is moderately chlorine resistant. Hybrid media is engineered to encompass all the attributes of 500-1 softening media and leverage all functions of 500-2 conditioning media when working together with ProGuard or ProGuard Plus. The media combines high operating capacity with excellent chemical and physical stability to ensure a long, dependable life. An NSF-approved clarifying media is included to provide crystal-clear water. Food-grade gravel under-bedding ensures uniform flow, minimal pressure drop, and uniform performance.

Controller/Meter

Regeneration of the system is initiated by a simplified digital control, which electronically meters softened water flow and makes decisions to regenerate based on water consumption and program settings. Salt dosage is controlled differentially to maximize the softener's efficiency.

Regeneration

These softener models are controlled electronically. A fully programmable microprocessor controls Backwash, Ion Exchange, Rapid Rinse, Tank Fill, and Return-to-Service cycles. Cycle sequences will vary based upon field configuration.

Control Valve

A hydraulically balanced and coated piston slides effortlessly through chlorine-resistant seals & spacers. All moving parts in the waterway are either coated brass or composite Noryl® materials to ensure a long and reliable service life.

Resin Tank

All softener models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100. All fiberglass tanks carry a limited lifetime warranty.

Brine Tank

A robust brine tank is included as part of the system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required.

Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine for each regeneration. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard & ProGuard Plus

A ProGuard reservoir is included with this system to ensure peak performance, maximize efficiency, and provide the highest level of protection from inorganic metals and minerals.

www.crusaderwater.com

Commercial Water Softener

Crusader 3" Pro Softener

Maximum Piping Size - 3"

Water Temperature - 40 - 80°F

Water Pressure - 40 - 80 psi



- Lead-Free Brass
- Single Piston Design
- Onboard Relays
- Disinfectant Coating
- No Hard Water Bypass Option
- Simplex, Series, or Parallel Service
- Differential Brining (Single Tank Models)
- Easily Network up to 6 Systems
- Field-Upgradeable Software
- Motor-Activated Valves Available
- Brine-Pit Controls Available

www.crusaderwater.com

Crusader 3" Pro Models

	CS3-240	CS3-270	CS3-300	CS3-300-30	CS3-450	CS-450-36
Maximum Capacity (Grains - CaCo3)	240,000	270,000	300,000	300,000	450,000	450,000
High Efficiency Capacity (Grains - CaCo3)	192,000	216,000	240,000	240,000	360,000	360,000
Maximum Salt Used Per Regen (lbs)	120	135	150	150	225	225
High Efficiency Salt Used Per Regen (lbs)	64	72	80	80	120	120
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	143	134	126	205	186	238
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	111	104	98	158	144	185
Dimension A - Overall System Height	90	90	90	86	86	87
Dimension B - System Piping Height	~87	~87	~87	~83	~83	~84
Dimension C - Pressure Vessel Height	72	72	72	72	72	72
Dimension D - Pressure Vessel Diameter	24	24	24	30	30	36
Brine Tank Dimensions (L x W) (Inches)	30 x 50	30 x 50	30 x 50	30 x 50	39 x 48	39 x 48
Overall Space Required (L x W x H) (Inches)	30 x 57 x 90	30 x 57 x 90	30 x 57 x 90	30 x 63 x 86	39 x 73 x 86	39 x 79 x 87

*Factory Settings

Commercial Water Softener

	CS3-600	CS3-750	CS3-900	CS3-1200	CS3-2100
Maximum Capacity (Grains - CaCo ₃)	600,000	750,000	900,000	1,200,000	2,100,000
High Efficiency Capacity (Grains - CaCo ₃)	480,000	600,000	720,000	960,000	1,680,000
Maximum Salt Used Per Regen (lbs)	300	375	450	600	1,050
High Efficiency Salt Used Per Regen (lbs)	160	200	240	320	560
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	222	244	238	251	270
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	172	190	180	194	210
Dimension A - Overall System Height	87	105	105	105	112
Dimension B - System Piping Height	~84	~102	~102	~102	~109
Dimension C - Pressure Vessel Height	72	72	72	72	86
Dimension D - Pressure Vessel Diameter	36	42	42	48	63
Brine Tank Dimensions (L x W) (Inches)	39 x 48	42 x 60	50 x 60	50 x 60	50 x 60
Overall Space Required (L x W x H) (Inches)	39 x 79 x 87	42 x 88 x 105	50 x 96 x 105	50 x 102 x 105	50 x 117 x 112

*Factory Settings

Undercounter Twin 9100

The Crusader Twin 9100 Foodservice Water Softeners is suitable for applications up to 26,000 grains of hardness reduction capacity at peak flow rates of up to 10 gpm.

Operation of the Softener

Hard water contains dissolved minerals in the form of Calcium (Ca), Magnesium (Mg), Iron (Fe), Copper (Cu), & Zinc (Zn). Reduction of these contaminants is accomplished through an ion-exchange process. As water flows through the mineral tank, ions attach onto and inside the resin. Over time, the resin will become saturated with contaminants, and the softener will require regeneration using a sodium or potassium brine solution.

Softening Media - AquaPro 500-2

Exchange media is a high quality, FDA certified, commercial-grade strong acid cation Functional Matrix resin with a very high whole bead count and no color throw. It's physically hard and is moderately chlorine resistant. The media combines high operating capacity with excellent chemical and physical stability for a long, dependable life.

Controller/Meter

Regeneration of the system is initiated by a simplified electronic control timer, which electronically meters softened water flow and makes decisions to regenerate based on water consumption and program settings.

Regeneration

A fully programmable microprocessor controls Tank Alternation, Upflow or Downflow Ion Exchange (depending on model), Backwash, Rapid Rinse, Tank Fill, and Return-to-Service cycles.

Control Valve

Two hydraulically balanced and coated pistons utilize a composite drivetrain. All parts in the waterway are either coated brass or composite Noryl® materials to ensure a long and reliable service life.

Resin Tanks

All softener models feature two non-corrosive fiberglass tanks, with unibody thermoplastic inner liners. Each tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. Each tank is approved by NSF, UL, and the FDA. They also meet WQA Standard S-100.

Brine Tank

A high capacity brine tank is included as part of the system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required.

Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration cycle. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard Reservoir

A ProGuard reservoir is optional for this system. When installed, the reservoir ensures peak performance, maximizes system efficiency, and provides the highest level of protection from bacteria and inorganic metals and minerals.



Foodservice Water Softener

Spot-free dishes and glassware

Cleaner crockery and cutlery -- significantly reduce or eliminate labor-intensive hand polishing

Reduced operating expenses

Reduce detergent costs and energy consumption by as much as 50% in addition to lower maintenance costs and downtime

Extended equipment life

Eliminate scale buildup to protect heat exchange and moving contact surfaces



	CS-FSTWIN-1DF	CS-FSTWIN-2DF	CS-FSTWIN-3DF	CS-FSTWIN-1UF	CS-FSTWIN-2UF	CS-FSTWIN-3UF
Max Capacity/Tank (grains)	6,000	12,000	19,000	8,000	16,000	26,000
Max Influent Hardness (gpg)	40	40	40	40	50	50
Max Influent Iron (ppm)	0.1	0.2	0.8	0.2	0.5	1.0
Peak Flow Rate (gpm)	6	8	10	6	8	10
Salt Per Regeneration*	1.0 - 3.0	2.0 - 6.0	3.0 - 10.0	1.0 - 3.0	2.0 - 6.0	3.0 - 10.0
Water Per Regeneration (gallons)	10	12	15	10	12	15
Inlet Pipe Size	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Tank Diameter	10"	10"	10"	10"	10"	10"
Brine Tank Size	10" x 16"	11" x 20"	11" x 20"	10" x 16"	11" x 20"	11" x 20"
Overall Width (Softener Only)	24"	24"	24"	24"	24"	24"
Overall Height (Softener Only)	26.5"	26.5"	26.5"	26.5"	26.5"	26.5"
Equipment Weight (lbs)	55.0	75.5	95.0	57.0	77.5	97.0

*Salt usage requirements increase as hardness levels and iron levels increase. Consult with your Crusader representative for detailed information.

www.crusaderwater.com

Hot Water Softeners

The Crusader Hot Water Foodservice Water Softeners is suitable for applications up to 60,000 grains of hardness reduction capacity at peak flow rates of up to 15 gpm.

Operation of the Softener

Hard water contains dissolved minerals in the form of Calcium (Ca), Magnesium (Mg), Iron (Fe), Copper (Cu), & Zinc (Zn). Reduction of these contaminants is accomplished through an ion-exchange process. As water flows through the mineral tank, ions attach onto and inside the resin. Over time, the resin will become saturated with contaminants, and the softener will require regeneration using a sodium or potassium brine solution.

Softening Media - AquaPro 500-2

Exchange media is a high quality, FDA certified, commercial-grade strong acid cation Functional Matrix resin with a very high whole bead count and no color throw. It's physically hard and is moderately chlorine resistant. The media combines high operating capacity with excellent chemical and physical stability to ensure a long, dependable life.

Controller/Meter

Regeneration of the system is initiated by a simplified control timer, which initiates regeneration based on a user-set calendar day interval.

Regeneration

A mechanical preset controls Backwash, Ion Exchange, Rapid Rinse, Tank Fill, and Return-to-Service cycles.

Control Valve

A hydraulically balanced and coated piston utilizes a composite drivetrain. All parts in the waterway are coated brass, NSF-approved composites, or lead-free brass materials. These high quality materials ensure long and reliable service life.

Resin Tanks

All softener models feature a non-corrosive fiberglass tank with unibody thermoplastic inner liners. Each tank has a maximum working pressure of 90 psi and a working temperature up to 150°F. Each tank is approved by NSF, UL, and the FDA. They also meet WQA Standard S-100.

Brine Tank

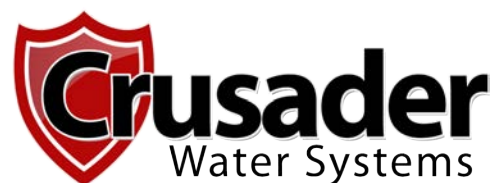
A high capacity brine tank is included as part of the system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required.

Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration cycle. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard Reservoir

A ProGuard reservoir is optional for this system. When installed, the reservoir ensures peak performance, maximizes system efficiency, and provides the highest level of protection from bacteria and inorganic metals and minerals.



www.crusaderwater.com

Foodservice Water Softener

Spot-free dishes and glassware

Cleaner crockery and cutlery -- significantly reduce or eliminate labor-intensive hand polishing

Reduced operating expenses

Reduce detergent costs and energy consumption by as much as 50% in addition to lower maintenance costs and downtime

Extended equipment life

Eliminate scale buildup to protect heat exchange and moving contact surfaces




	CS-HWS-1	CS-HWS-2	CS-HWS-3	CS-HWS-4
Max Capacity (15lbs/ft ³)	17,000 grains	26,000 grains	46,000 grains	60,000 grains
Max Influent Hardness (gpg)	40	40	50	100
Max Influent Iron (ppm)	0.5	0.5	1.0	1.0
Overall Height (softener only)	27"	48"	61"	61"
Salt Per Regeneration*	3.0 - 10.0	4.5 - 12.0	7.0 - 19.0	10.0 - 25.0
Inlet Pipe Size	3/4"	3/4"	3/4"	3/4"
Tank Dimensions	10" x 19"	9" x 10"	10" x 54"	13" x 54"
Brine Tank Size	10" x 16"	11" x 11"	18" x 30"	18" x 40"
Peak Flow Rate (gpm)	6	10	12	15
Operating Temperature	40 - 150°F	40 - 150°F	40 - 150°F	40 - 150°F
Equipment Weight (lbs)	45.0	62.0	70.0	95.5

*Salt usage requirements increase as hardness levels and iron levels increase.
Consult with your Crusader representative for detailed information.

www.crusaderwater.com



 **Crusader**
Water Systems

Water Filtration Systems

Crusader Basic Taste & Odor Filter

The Crusader Basic T&O Water Filtration System is designed to address heavy metals, pesticides, herbicides, and chlorine tastes & odors in microbiologically safe water at flow rates up to 20 gpm.

Operation of the Filtration System

Hard water can contain chemical pesticides and herbicides. Chlorine & Chloramine along with their disinfectant byproducts can also be found lurking in safe city water. Reduction of these contaminants is accomplished by conditioning & filtering the water through a sophisticated process of catalysis, absorption, adsorption, and physical filtration.

Media Tank

All filter models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tanks are approved by NSF, UL, and the FDA. They also meet WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty.

Filtration Media - ChlorZorb, and Catalytic Activator

ChlorZorb & the Catalytic Activator work together in synergy to effectively address chlorine, pesticides, herbicides, tastes, odors, and disinfection byproducts. Food-grade gravel under-bedding ensures uniform flow, minimal pressure drop, and consistent performance.

This filtration media blend is designed to address the following:

Aldehydes	1,1,1-Trichloro-2-Propanone
Bromodichloromethane	Heptachlor
Bromoform	Heptachlor Epoxide
Chlorine	Hexachlorobutadiene
Chlorobenzene	Hexachlorocyclopentadiene
Chloroform	Methoxychlor
Chlorodibromomethane	Pentachlorophenol
Haloacetonitriles (HAN)	1,1,2,2-Tetrachloroethane
Bromochloroacetonitrile	Tetrachloroethylene
Dibromoacetonitrile	Tribromoacetic Acid
Dichloroacetonitrile	1,1,1-Trichloroethane
Trichloroacetonitrile	1,1,2-Trichloroethane
Haloketones (HK)	Trichloroethylene
1,1-Dichloro-2-Propanone	Trihalomethanes (THMs)

This filtration system should only be installed on municipal water supplies known to be microbiologically safe and devoid of sediment.

www.crusaderwater.com

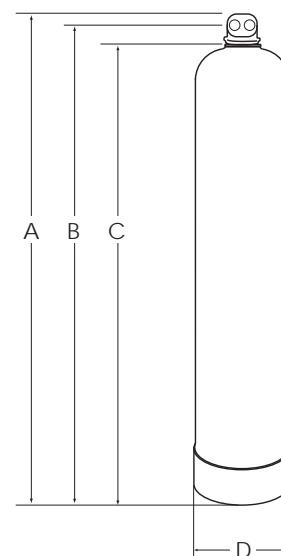
Commercial Water Filtration System

Crusader Basic Taste & Odor Filter



Ideal for:

Apartments
Commercial Ice Makers
Condominiums
Drinking Fountains
Eyewash Stations
Reverse Osmosis Pretreat
Smaller Homes
Soda Machines



	CS-TO-BSC-1.0	CS-TO-BSC-1.5	CS-TO-BSC-2.0
Maximum Chlorine Reduction (Gal. @ 0.25 ppm Chlorine)	100,000	200,000	300,000
Maximum Chlorine Reduction (Gal. @ 2.0 ppm Chlorine)	20,000	30,000	50,000
Absolute Filtration Size (micron)	N/A	N/A	N/A
Maximum Influent Chlorine Level (ppm)	1	2	3
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	15	18	20
Water Pressure Range (psi)	45 - 75	45 - 75	45 - 75
Maximum Inlet Pipe Size	1"	1"	1"
Dimension A - Overall System Height	58"	56"	56"
Dimension B - System Piping Height	56"	54"	54"
Dimension C - Height of Mineral Tank	54"	52"	52"
Dimension D - System Tank Diameter	10"	12"	12"
Total Space Required (L x W x H) (Inches)	10 x 10 x 56	12 x 12 x 54	12 x 12 x 54
Shipping Weight (lbs)	60	80	120

Crusader Deluxe Taste & Odor Filter

The Crusader Deluxe T&O Water Filtration System is designed to address heavy metals, pesticides, herbicides, and chlorine tastes & odors in microbiologically safe water at flow rates up to 35 gpm.

Operation of the Filtration System

Hard water can contain chemical pesticides and herbicides. Chlorine & Chloramine with their disinfectant byproducts can also be found lurking in safe city water. Reduction of these contaminants is accomplished by conditioning & filtering the water through a sophisticated process of catalysis, absorption, adsorption, and physical filtration.

Controller/Meter

Cleaning of the system is initiated by a sophisticated electronic control timer, which electronically meters filtered water flow and makes decisions to clean based on measured water consumption, elapsed time, and other program settings.

Automatic Cleaning & Control Valve

A fully programmable microprocessor controls Backwash, Vortex Rinse, and Return-to-Service cycles. This ensures that the effluent water quality is according to specifications. A hydraulically balanced, self-cleaning piston utilizes a composite drivetrain and high resolution optical encoder. All parts in the waterway are either coated brass or composite Noryl® materials to ensure long and reliable service life.

Media Tank

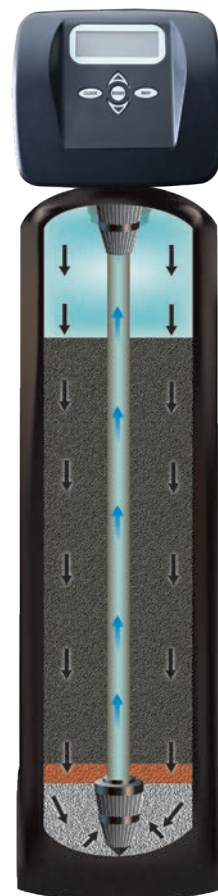
All filter models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tanks are approved by NSF, UL, and the FDA. They also meet WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty.

Filtration Media - ChlorZorb, Clarifier, and Catalytic Activator

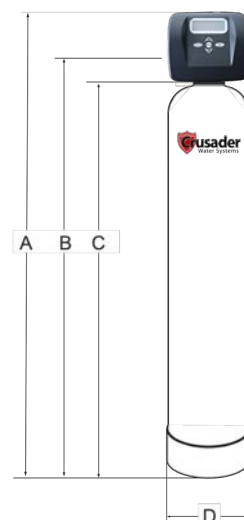
ChlorZorb & the catalytic activator work together in synergy to effectively address chlorine, chloramine, pesticides, herbicides, tastes, odors, and disinfection byproducts. The clarifying media ensures that all particles greater than 20 micron are removed from the water, which leaves water crystal clear. Food-grade gravel under-bedding ensures uniform flow, minimal pressure drop, and consistent performance. This media combination is designed to address the following:

Aldehydes
Bromodichloromethane
Bromoform
Chlorine
Chlorobenzene
Chloroform
Chlorodibromomethane
Haloacetonitriles (HAN)
Bromochloroacetonitrile
Dibromoacetonitrile
Dichloroacetonitrile
Trichloroacetonitrile
Haloketones (HK)
1,1-Dichloro-2-Propanone
1,1,1-Trichloro-2-Propanone

Heptachlor
Heptachlor Epoxide
Hexachlorobutadiene
Hexachlorocyclopentadiene
Metals
Methoxychlor
Pentachlorophenol
Simazine
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Tribromoacetic Acid
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
Trihalomethanes (THMs)



Commercial Water Filtration System



Crusader Deluxe Taste & Odor Filter

	CS-TO-DLX-1.0	CS-TO-DLX-2.0	CS-TO-DLX-3.0
Maximum Chlorine Reduction (Gal. @ 0.25 ppm Chlorine)	100,000	200,000	300,000
Maximum Chlorine Reduction (Gal. @ 2.0 ppm Chlorine)	20,000	40,000	60,000
Absolute Filtration Size (micron)	20	20	20
Maximum Influent Chlorine Level (ppm)	2	3	4
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	22	25	35
Water Pressure Range (psi)	45 - 75	45 - 75	45 - 75
Maximum Inlet Pipe Size	1"	1"	1.25"
Dimension A - Overall System Height	66"	66"	77"
Dimension B - System Piping Height	55.8"	55.8"	66.8"
Dimension C - Height of Mineral Tank	54"	54"	65"
Dimension D - System Tank Diameter	10"	13"	14"
Total Space Required (L x W x H) (Inches)	10 x 10 x 66	13 x 13 x 66	14 x 14 x 77
Shipping Weight (lbs)	80	100	140

Crusader Enhanced Water Filter

The Crusader Enhanced Water Filtration system is designed to address hardness, heavy metals, pesticides, herbicides, and chlorine tastes & odors in microbiologically safe water at flow rates up to 28 gpm.

Operation of the Filtration System

Hard water can contain dissolved minerals in the form of Calcium (Ca), Magnesium (Mg), and metals such as Iron (Fe), Copper (Cu), Lead (Pb), Nickel (Ni), Zinc (Zn), Lithium (Li) and other inorganics. Chemical Pesticides, Herbicides, Chlorine, & Chloramine with their disinfectant byproducts can also be found in safe city water. Reduction of these contaminants is accomplished by conditioning & filtering the water through a sophisticated ion-exchange process as well as catalysis, absorption, adsorption, and physical filtration.

Filtration Media - AquaPro 500-3a, ChlorZorb, & Catalytic Activator

The exchange media is a high quality, FDA certified, commercial-grade strong acid cation Functional Matrix filtration media with a very high whole bead count and no color throw. It is physically hard and is extremely resistant to chlorine oxidation, fouling, and attrition. 500-4 filtration media is designed to work together with ProGuard & ProGuard Plus performance enhancers to synergistically function at peak efficiency levels and provide you with the water quality, taste, & feel that you desire. The media combines high operating capacity with excellent chemical and physical stability to ensure a long, dependable life. ChlorZorb & the catalytic activator work together in synergy to effectively address chlorine, chloramine, pesticides, herbicides, tastes, odors, and disinfection byproducts. These media are further activated by ProGuard & ProGuard Plus, which maintains a bacteriostatic environment.

Controller/Meter

Regeneration of the system is initiated by a sophisticated electronic control timer, which precisely meters filtered water flow and makes decisions to regenerate based on measured water consumption, elapsed time, and other program settings.

Regeneration & Control Valve

A fully programmable microprocessor controls Tank Fill, Percolation, Backwash, Ion Displacement, Backwash, Vortex Rinse, and Return-to-Service cycles. This ensures that water quality meets specifications. A hydraulically balanced, self-cleaning piston utilizes a composite drivetrain and high-resolution optical encoder. All parts in the waterway are either coated brass or composite Noryl® materials to ensure long and reliable service life.

Media Tank

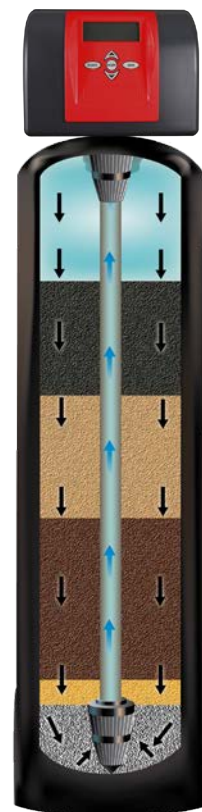
All models feature a non-corrosive fiberglass media tank with a one-piece thermoplastic inner liner. The tanks are approved by NSF, UL, and the FDA. They also meet WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty.

Brine Tank & Brine System

The high capacity brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required. Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration cycle. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard

A high efficiency ProGuard reservoir is included with this system to ensure peak performance, maximize efficiency, and provide the highest level of protection from inorganic metals and minerals.

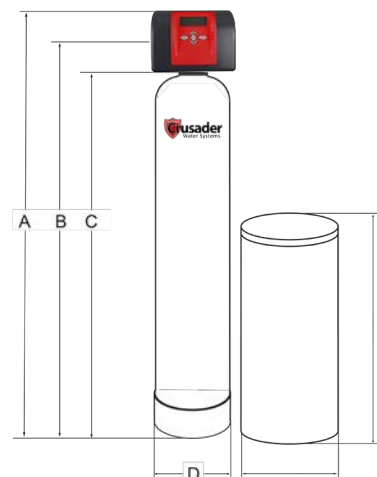


Commercial Water Filtration System

Crusader Enhanced Water Filter



Maximum Piping Size - 1"
 Water Temperature - 40 - 80°F
 Water Pressure - 40 - 80 psi



Crusader Enhanced Water System

	CS-E-35	CS-E-50	CS-E-72	CS-E-96	CS-E-130
Maximum Capacity (Grains-CaCo3)	35,000	50,000	72,000	96,000	130,000
Default Capacity (Grains-CaCo3)*	28,400	42,600	56,800	85,200	113,600
High Efficiency Capacity (Grains-CaCo3)	22,000	33,000	44,000	66,000	88,000
Maximum Salt Used Per Cleaning (lbs)	15	22	30	45	60
Default Salt Used Per Cleaning (lbs)	9	14	18	27	36
High Efficiency Salt Used Per Cleaning (lbs)	6	9	12	18	24
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	21	22	23	25	28
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	13	14	16	20	25
Dimension A - Overall System Height	62"	62"	62"	73"	73"
Dimension B - System Piping Height	56.09"	56.09"	56.09"	67.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	54"	65"	65"
Dimension D - Pressure Vessel Diameter	10"	13"	13"	16"	18"
Brine Tank Dimensions (L x W x H) (Inches)	14 x 14 x 34	15 x 17 x 36	18 x 40	18 x 40	24 x 50
Total Space Required (L x W x H) (Inches)	14 x 25 x 62	14 x 25 x 62	18 x 32 x 60	18 x 35 x 62	24 x 44 x 73
Shipping Weight (lbs)	115	145	215	270	375

*Factory Settings

www.crusaderwater.com

Crusader Ultraviolet

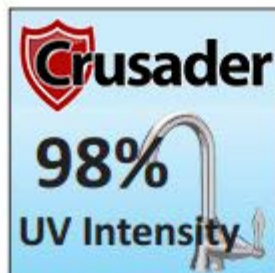
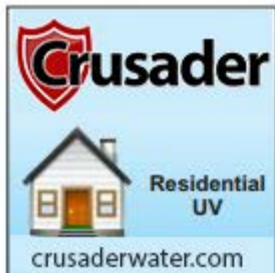
Crusader Ultraviolet Disinfection Systems are designed to address bacteria, mold, fungus, virus, and other reactive chemistries in filtered water at flow rates of up to 39 GPM.

Crusader's Ultraviolet Systems are designed and built in Canada to ensure quality, reliability, and supply chain stability.

- All lamps are manufactured in North America with less than 10mg of mercury
- Axial flow UV chamber designed to meet ASME pressure vessel standards
- Fully potted ballast in splash proof case to help prevent water damage
- Numerous international certifications such as NSF and WaterMark



The Crusader Ultraviolet Disinfection System is designed to provide many years of reliable service. The onboard computer controller includes an intuitive display and messaging system to aid you in understanding the status of your system. This controller is compatible with optional accessories, like UV monitor, Relay control system, Automation system interface, and our Internet monitoring interface.



www.crusaderwater.com

Water Disinfection System

	CWS5-031 CWS5-03-12V CWS5-03-24V	CWS5-061 CWS5-06-12V CWS5-06-24V	CWS5-101 CWS5-10-24V	CWS5-151	CWS5-201
Crusader Flow Rate (@16 mJ/cm² 95% UVT)	6 GPM	11 GPM	20 GPM¹	30 GPM²	39.2 GPM²
	23 lpm	41 lpm	77 lpm¹	113.6 lpm²	150 lpm²
	1.4 m³/hr	2.5 m³/hr	4.6 m³/hr¹	6.8 m³/hr²	8.9 m³/hr²
Crusader Flow Rate (@30 mJ/cm² 95% UVT)	3 GPM	6 GPM	11 GPM	15 GPM	21 GPM
	11.4 lpm	22.7 lpm	41 lpm	56.8 lpm	79 lpm
	0.7 m³/hr	1.4 m³/hr	2.5 m³/hr	3.4 m³/hr	4.8 m³/hr
Crusader Flow Rate (@40 mJ/cm² 95% UVT)	2.4 GPM	4.4 GPM	8.3 GPM	12 GPM	16 GPM
	9.1 lpm	17 lpm	31 lpm	45.4 lpm	59 lpm
	0.5 m³/hr	1.0 m³/hr	1.9 m³/hr	2.7 m³/hr	3.6 m³/hr
Port Size	.5" MNPT	.75" MNPT	.75" MNPT	1" MNPT	1" MNPT
Electrical	90-265V/50-60Hz.				
Plug Type	North American, NEMA 5-15, 3-wire for all 110V				
Lamp Watts	15	22	39	50	42
Power (Watts)	20	30	49	62	51
Replacement Lamp	RL-290	RL-470	RL-820	FL-999	RL-850
Replacement Sleeve	RQ-290	RQ-470	RQ-820	RQ-999	RQ-850
Reactor Dimensions	2.5 x 14.3"	2.5 x 21.3"	2.5 x 35.2"	2.5 x 40.0"	3.5 x 36.1"
Chamber Material	Polished 304 Stainless Steel, A249 Pressure Rated Tubing				
Controller Dimensions	6.8 x 3.6 x 3"				
Operating Pressure	0.7 - 10.3 bar (10 - 150 psi)				
Operating Water Temperature	36 - 104°F				
UV Monitor Port (Upgradeability)	No	Yes			
Solenoid Output	Yes, but requires optional solenoid module				
4-20 mA Output	Yes, but requires options 4-20 mA module				
Lamp Change Reminder (Audible and Visual)	Yes				
Lamp-Out Indicator (Audible and Visual)	Yes				
Shipping Weight (lbs)	7.3 lbs	9.3 lbs	15 lbs	17.6 lbs	16.5 lbs

CRUSADER
WATER



Commercial Salt-Free Scale Control Systems

Crusader Active Armour Cartridges

Crusader Active Armour Water Conditioning Cartridges are designed to address hard water scale, TDS-induced corrosion, Chlorine, and naturally aggressive waters at flow rates up to 25 gpm.

ACTIVE ARMOUR IS YOUR FIRST LINE OF DEFENSE IN REDUCING HARDNESS SCALE, PREVENTING CORROSION, AND PROTECTING PIPING & APPLIANCES

While not a Water Softening technology, Active Armour system recommended for use with tankless water heaters, tank-type water heaters, reverse osmosis purifiers, nanofilters, ultrafilters, ice machines, coffee and vending machines, food service equipment, humidifiers, air conditioning equipment, and many other types of water processing equipment affected by calcium carbonate scale or potentially corrosive water conditions.

SIMPLE, SAFE AND COST-EFFECTIVE:

- Bonds with Hard Water compounds like Calcium and Magnesium Carbonates
- Bonds with inorganic metals in the water like Iron, Copper, and Zinc
- Inhibits the ability of Carbonate scale to form in the plumbing system and appliances
- Prevents corrosion of metallic pipes, appliances, and fixtures with a protective nanolayer
- Reduces existing scale formation without using acid or dangerous chemicals
- Increases heating efficiency and reduces maintenance

Crusader Active Armour Plus Cartridges Provide Additional Water Conditioning

Crusader Active Armour Plus Cartridges contain additional Filtration Media that further conditions the water. ChlorZorb & the catalytic activator work together in synergy to effectively address chlorine, pesticides, herbicides, tastes, odors, and disinfection byproducts. Food-grade gravel under-bedding ensures uniform flow, minimal pressure drop, and consistent performance.



Crusader's Active Armour solutions are developed and manufactured in the USA to ensure rigorous quality control and environmental sustainability standards are maintained throughout production.

www.crusaderwater.com

Commercial Water Conditioner

Active Armour Cartridge Systems	CS-AA-075	CS-AA-100	CS-AA-115	CS-AA-200	CS-AA-225
Peak Flow (GPM)	5	10	15	20	25
Life Expectancy (Gallons)	25,000	50,000	75,000	120,000	120,000
Total Space Required L x W x H (Inches)	5.5 x 5.5 x 20	8 x 8 x 21	8 x 8 x 21	8 x 8 x 32	8 x 8 x 32
Shipping Weight (lbs)	8	12.5	13	16.5	17.5

Active Armour Replacement Cartridges	AA-075	AA-100	AA-115	AA-200	AA-225
Peak Flow (GPM)	5	10	15	20	25
Life Expectancy (Gallons)	25,000	50,000	75,000	120,000	120,000
Shipping Weight (lbs)	2.5	4.5	5	6	7

Active Armour Plus Cartridge Systems	CS-AAP-075	CS-AAP-100	CS-AAP-115	CS-AAP-200	CS-AAP-225
Peak Flow (GPM)	5	10	15	20	25
Life Expectancy (Gallons)	25,000	50,000	75,000	120,000	120,000
Total Space Required L x W x H	5.5 x 5.5 x 20	8 x 8 x 21	8 x 8 x 21	8 x 8 x 32	8 x 8 x 32
Shipping Weight (lbs)	8.5	13.5	14	18.5	19.5

Active Armour Plus Replacement Cartridges	AAP-075	AAP-100	AAP-115	AAP-200	AAP-225
Peak Flow (GPM)	5	10	15	20	25
Life Expectancy (Gallons)	25,000	50,000	75,000	120,000	120,000
Shipping Weight (lbs)	3	5.5	6	8	9

Crusader Active Armour Tank

The Crusader Active Armour series of custom water conditioners is designed to address hard water scale, TDS-induced corrosion, and naturally aggressive waters at flow rates up to 20 gpm.

Operation of the Conditioning System

Hard water can contain Calcium and Magnesium Carbonates. Phosphates easily adapt to any pre-existing water quality without negatively affecting the water chemistry. Referred to as inhibitors (ortho), sequestrants (poly), or blends (ortho/poly), phosphates have a selective function yet wide range of performance.

Crusader Active Armour based systems are classified as corrosion inhibitors and as such react with dissolved metals (e.g. Ca, Mg, Zn, etc.) in the water to form a very thin metal-phosphate coating while also reacting with metals on pipe and fitting surfaces to form a microscopic barrier on the inner surface that is exposed to the treated water.

Active Armour based systems react with soluble metals (iron, manganese, calcium, magnesium, etc.) by sequestering (binding-up) the metals to maintain their solubility in water. The phosphate sequestering process minimizes the risk of discoloration, staining, scaling, taste/odor, and other water quality complaints.

Many secondary benefits develop from use of an Active Armour system: reduced chlorine demand due to corrosion inhibition and sequestration of Fe/Mn, lower color and turbidity in the distribution system, less staining, removal of system scale deposits, control of biofilm regrowth, lower TOC, fewer system coliform violations, increased C-factors and hydraulic flow rates in system, reduced electrical demand, fewer main breaks, better valve operation, improved meter accuracy, increased revenue, reduced hydrant flushing frequency, less wasted water during flushing, less maintenance and service expenditures, fewer complaint calls, and overall improved consumer satisfaction.

Crusader's Active Armour blended solutions are developed and manufactured in the USA to ensure rigorous quality control and environmental sustainability standards are maintained throughout production.

Media Tank

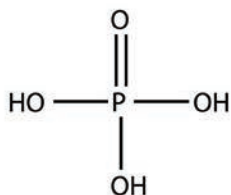
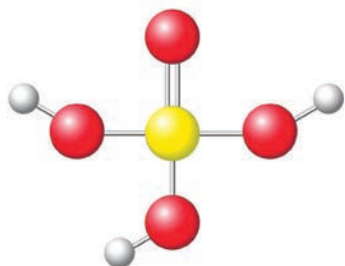
All filter models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tanks are approved by NSF, UL, and the FDA. They also meet WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty.

This conditioning system should only be installed on municipal water supplies known to be microbiologically safe and devoid of sediment.



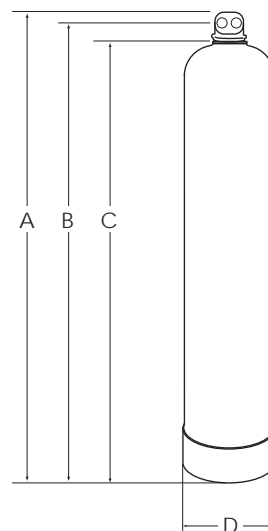
Commercial Water Conditioner

Crusader Active Armour Tank



Ideal for:

Apartments
Commercial Ice makers
Condominiums
Drinking Fountains
Eyewash Stations
Reverse Osmosis Pretreat
Smaller Homes
Soda Machines
Water Heaters



	CS-AA-200T	CS-AA-225T	CS-AA-300T
Maximum Feedwater Hardness (gpg)	30	40	50
Maximum Feedwater Iron Level (ppm)	1	2	2
Operating pH Range	5.8 - 8.5	5.8 - 8.5	5.8 - 8.5
Maximum Influent Chlorine Level (ppm)	1	1	1
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	15	18	20
Water Pressure Range (psi)	45 - 75	45 - 75	45 - 75
Maximum Inlet Pipe Size	1"	1"	1"
Dimension A - Overall System Height	58"	58"	58"
Dimension B - System Piping Height	56.09"	56.09"	56.09"
Dimension C - Height of Mineral Tank	54"	54"	54"
Dimension D - System Tank Diameter	10"	10"	10"
Shipping Weight (lbs)	35	45	55

Crusader Active Armour Plus

The Crusader Active Armour Plus series of custom water conditioners is designed to address hard water scale, TDS-induced corrosion, Chlorine, and Chloramine tastes and odors at flow rates up to 20 gpm.

Operation of the System

Hard water can contain Calcium and Magnesium Carbonates. These systems easily adapt to any pre-existing water quality without negatively affecting the water chemistry. Referred to as inhibitors (ortho), sequestrants (poly), or blends (ortho/poly), phosphates have a selective function yet wide range of performance. These systems work as corrosion inhibitors by forming a microscopic barrier on the inner surface of metallic piping and fixtures.

Crusader Active Armour systems react with soluble metals (iron, manganese, calcium, magnesium, etc.) by sequestering them to reduce discoloration, staining, scaling, tastes/odors, and other hard water issues.

Chlorine & Chloramine with their disinfectant byproducts can also be found lurking in safe city water. Reduction of these contaminants is accomplished by conditioning & filtering the water through a sophisticated process of catalysis, absorption, adsorption, and reduction.

Filtration Media - ChlorZorb, and Catalytic Activator

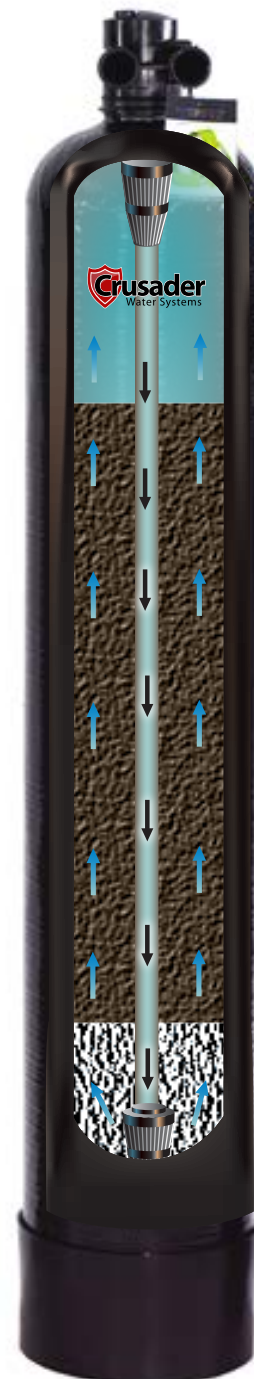
ChlorZorb & the catalytic activator work together in synergy to effectively address chlorine, pesticides, herbicides, tastes, odors, and disinfection byproducts. Food-grade gravel under-bedding ensures uniform flow, minimal pressure drop, and consistent performance.

This filtration media blend is designed to address the following:

Aldehydes	1,1,1-Trichloro-2-Propanone
Bromodichloromethane	Heptachlor
Bromoform	Heptachlor Epoxide
Chlorine & Chloramine	Hexachlorobutadiene
Chlorobenzene	Hexachlorocyclopentadiene
Chloroform	Methoxychlor
Chlorodibromomethane	Pentachlorophenol
Haloacetonitriles (HAN)	1,1,2,2-Tetrachloroethane
Bromochloroacetonitrile	Tetrachloroethylene
Dibromoacetonitrile	Tribromoacetic Acid
Dichloroacetonitrile	1,1,1-Trichloroethane
Trichloroacetonitrile	1,1,2-Trichloroethane
Haloketones (HK)	Trichloroethylene
1,1-Dichloro-2-Propanone	Trihalomethanes (THMs)

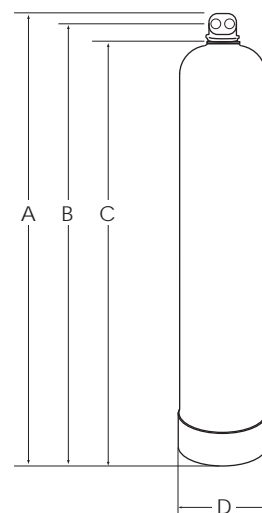
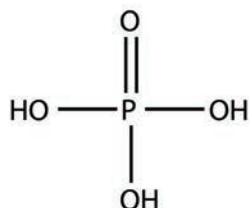
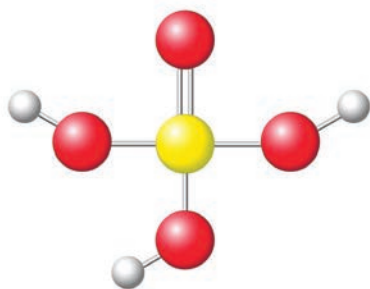
Media Tank

Non-corrosive fiberglass tank, with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100.



Commercial Water Conditioner

Crusader Active Armour Plus



	CS-AAP-200T	CS-AAP-225T	CS-AAP-300T
Maximum Chlorine Reduction (Gal. @ 0.25 ppm Chlorine)	100,000	200,000	300,000
Maximum Chlorine Reduction (Gal. @ 2.0 ppm Chlorine)	20,000	30,000	50,000
Maximum Feedwater Hardness (gpg)	35	40	50
Maximum Influent Chlorine Level (ppm)	2	3	4
Maximum Influent Iron Level (ppm)	1	2	2
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	15	18	20
Water Pressure Range (psi)	45 - 75	45 - 75	45 - 75
Maximum Inlet Pipe Size	1"	1"	1"
Dimension A - Overall System Height	58"	58"	58"
Dimension B - System Piping Height	56.09"	56.09"	56.09"
Dimension C - Height of Mineral Tank	54"	54"	54"
Dimension D - System Tank Diameter	10"	13"	13"
Shipping Weight (lbs)	75	105	125

This conditioning system should only be installed on water supplies known to be microbiologically safe & free of sediment.

Crusader Active Armour Liquid Injection System

Crusader Active Armour Water Liquid Injection Systems are designed to address hard water scale, TDS-induced corrosion, Chlorine, and naturally aggressive waters at flow rates up to 90 gpm.

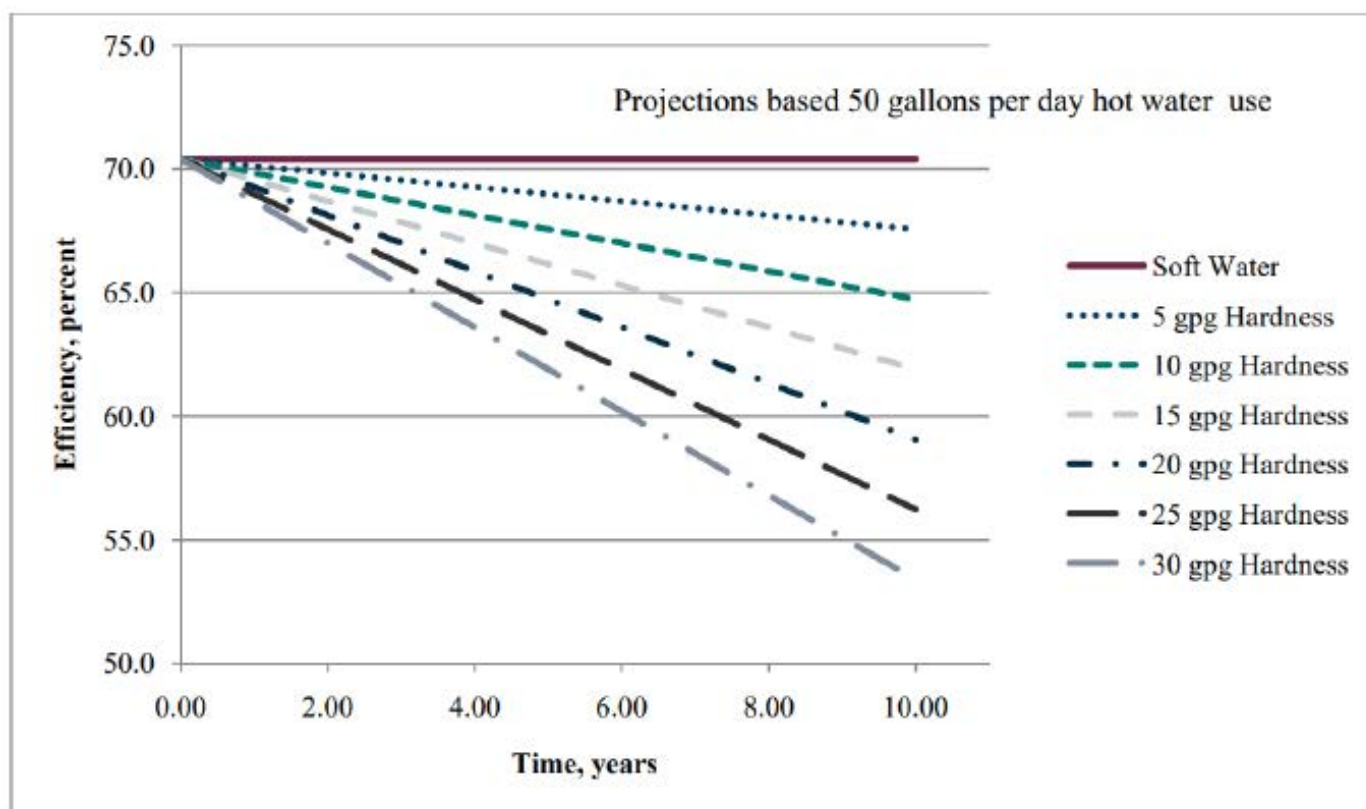
ACTIVE ARMOUR IS YOUR FIRST LINE OF DEFENSE IN REDUCING HARDNESS SCALE, PREVENTING CORROSION, AND PROTECTING PIPING & APPLIANCES

While not a Water Softening technology, Active Armour system recommended for use with tankless water heaters, tank-type water heaters, reverse osmosis purifiers, nanofilters, ultrafilters, ice machines, coffee and vending machines, food service equipment, humidifiers, air conditioning equipment, and many other types of water processing equipment affected by calcium carbonate scale or potentially corrosive water conditions.

SIMPLE, SAFE AND COST-EFFECTIVE:

- Bonds with Hard Water compounds like Calcium and Magnesium Carbonates
- Bonds with inorganic metals in the water like Iron, Copper, and Zinc
- Inhibits the ability of Carbonate scale to form in the plumbing system and appliances
- Prevents corrosion of metallic pipes, appliances, and fixtures with a protective nanolayer
- Reduces existing scale formation without using acid or dangerous chemicals
- Increases heating efficiency and reduces maintenance

Ongoing Energy Waste Caused By Hard Water Scale

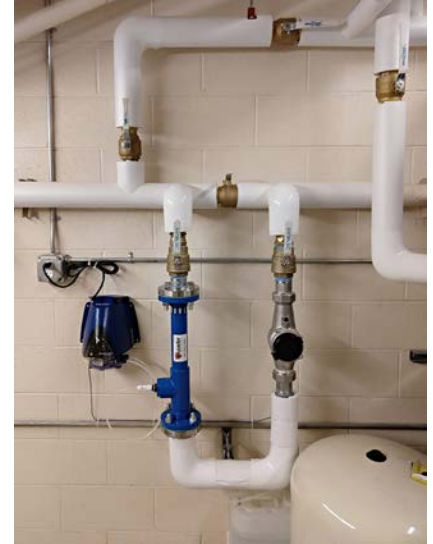
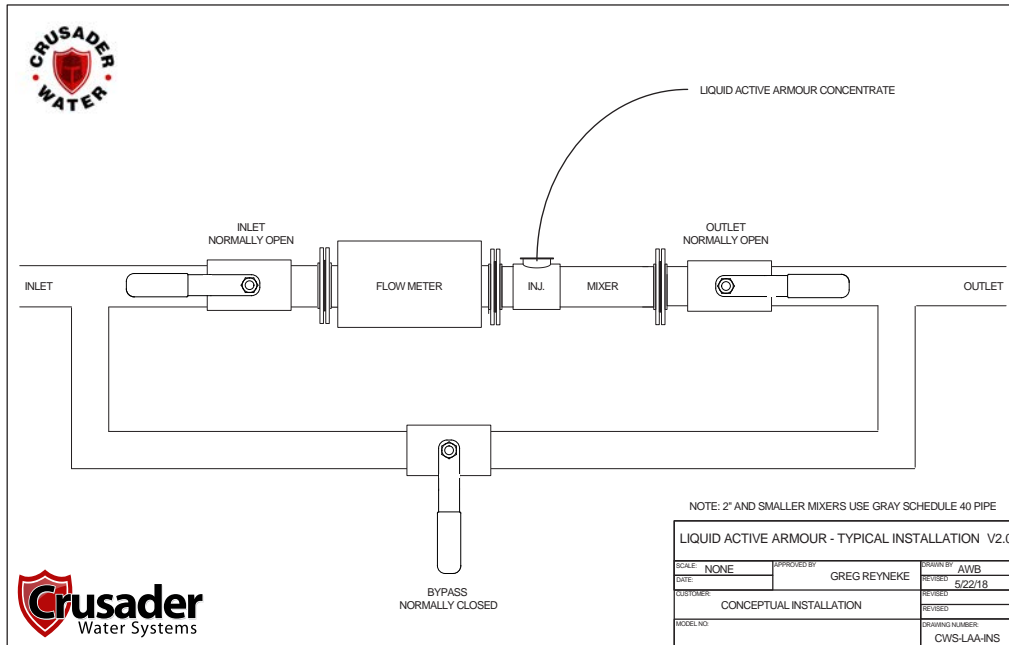


Crusader's Active Armour solutions are developed and manufactured in the USA to ensure rigorous quality control and environmental sustainability standards are maintained throughout production.

www.crusaderwater.com

Commercial Water Conditioner

Typical Liquid Active Armour Installation



Active Armour Liquid Injection Systems	CS-AA-LI-100 - 1"	CS-AA-LI-150 - 1.5"	CS-AA-LI-200 - 2"
Peak Flow (GPM)	30	50	90
Shipping Weight (lbs)	20	30	50



ACTIVE ARMOUR

Scale & Corrosion Prevention

Your first line of defense



www.crusaderwater.com

Drinking Water Systems



Crusader
Water Systems

Pentair Freshpoint

Water's secret ingredient:

Your local water treatment professional

The Quick Change Reverse Osmosis system is only available from authorized Pentair Water® professional dealers. Your local Crusader certified water treatment professional knows how to make the most of the advantages engineered into every Quick Change system:

- Installation expertise – a Pentair Water dealer makes sure your system is installed correctly and safely to ensure that it reliably delivers its best performance possible
- Local water knowledge – your hometown dealer knows the water problems common to your area, which empowers them to recommend the most effective, efficient, and affordable system
- Pentair pride – by partnering with an acknowledged industry leader in residential and commercial water treatment components, your local Crusader Water dealer demonstrates a superior concern for long-term customer care

There's a real satisfaction in knowing that your home's drinking water can be trusted for purity, flavor, and all-around refreshment, every hour of every day.

The best way to get that assurance is to choose products from an industry leader like Pentair and to back them up with the solid support and sound advice of your local Crusader dealer.

Five Star Water Quality



Fresher tasting, cleaner water doesn't come from what you add, but from what you take away.

That's why a Freshpoint RO system addresses an number of impurities and contaminants.

Our systems are designed to address a variety of substances:

- Harmful chemicals like lead, mercury, and asbestos
- Cysts including cryptosporidium that could affect health
- Chlorine and Chloramine in municipal water that create unpleasant tastes and odors
- Emerging Contaminants like pharmaceuticals



www.crusaderwater.com

Reverse Osmosis

	350B	475B	475M	575B	575M
Arsenic	✓	✓	✓	✓	✓
Dissolved Solids	✓	✓	✓	✓	✓
Taste & Odor	✓	✓	✓	✓	✓
Chlorine	✓	✓	✓	✓	✓
Lead	✓	✓	✓	✓	✓
Cysts	✓	✓	✓	✓	✓
Atrazine		✓	✓	✓	✓
Lindane		✓	✓	✓	✓
Volatile Organics				✓	✓
Cartridge Timer and TDS Monitor			✓		✓
NSF 42 & 58	✓	✓	✓	✓	✓
NSF 53		✓	✓	✓	✓



*NSF/ANSI Standard 58 certified to reduce cysts such as Cryptosporidium and Giardia by mechanical means.
EPA EST. NO. 082989-CHN-001



Problem Water Filtration Systems

Crusader Arsenic Reduction Filter

The Crusader Arsenic Reduction Filter is designed to reduce Arsenic from microbiologically safe water at flow rates up to 20 gpm.

Arsenic is generally colorless, tasteless, and odorless in water. Many groundwater supplies are contaminated with arsenic. In natural ground water, arsenic may exist as trivalent arsenic, pentavalent arsenic, or a combination of both. More information about arsenic and its toxicity can be found on the Agency for Toxic Substances and Disease Registry at <http://www.atsdr.cdc.gov/toxprofiles/phs2.html> and U.S. Environmental Protection Agency website at <http://www.epa.gov/safewater/arsenic.html>.

Media Tank

All filter models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100.

Filtration Media - LayneRT (Hydrous Metal Oxide Sorbent)

Media used for arsenic removal is affected by a number of water parameters.

To provide a service life estimate, we require a full water analysis that must include arsenite (As(III)), arsenate (As(V)), pH, silica, phosphate, iron, and manganese.

Total Arsenic - Total arsenic concentration above 0.30 mg/L will reduce media life.

Arsenite As(III) - The arsenic removal media removes both As(III) and As(V) but has approximately four times the capacity for As(V) over As(III). If arsenite is present it is recommended to oxidize the water ahead of the arsenic removal media.

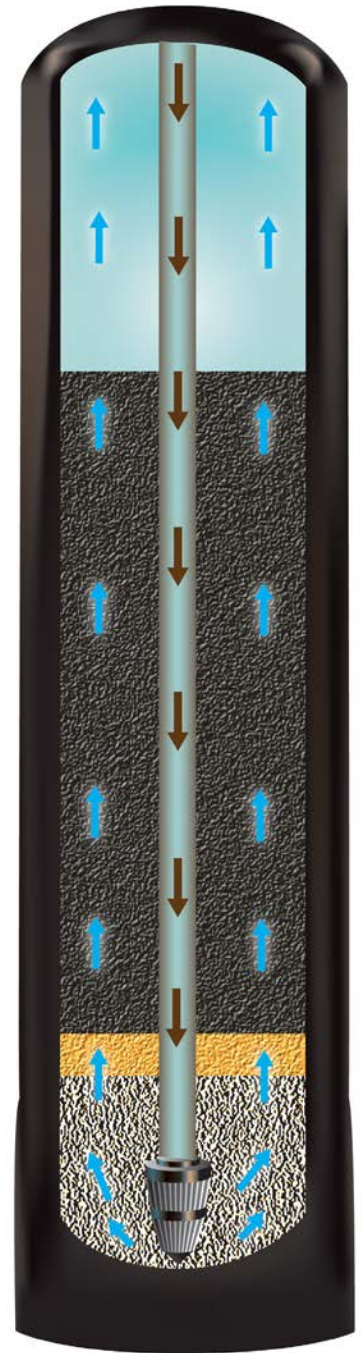
pH - Adsorption media operate most effectively between 5.5-8.5. The media will reduce arsenic outside of this range but the capacity may be compromised. At elevated pH, silica becomes a more aggressive interfering species. Note: Do not use organic acids (such as citric or acetic) to adjust the pH ahead of the media.

Silica - Levels above 20 mg/L begin to interfere with media arsenic adsorption when combined with a pH above 7.5.

Phosphate - Levels above 0.15 mg/L will reduce media life for arsenic adsorption.

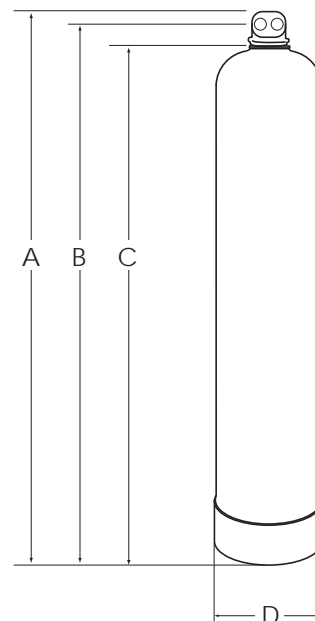
Iron and Manganese - Soluble iron and manganese may precipitate onto the media bed. If iron and manganese are above the secondary MCLs (0.30 mg/L and .050 mg/L respectively).

Hardness - Does not affect performance of the media.



Crusader Arsenic Reduction Filter

- NSF/ANSI Standard 61 Certified
- Proven Iron Chemistry
- No Fines
- No Backwash
- Centrally Regenerable Media
- Optimal Flow Dynamics
- Rapid Adsorption Kinetics
- Low Pressure Drop
- Spent Media Passes Toxicity Characteristic Leaching Procedure (TCLP)



This filtration system should only be installed after a comprehensive water test and engineering evaluation.

	CS-AS-1	CS-AS-2	CS-AS-3
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	10	15	20
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	4	8	12
Operating pH Range	5.5 - 8.5	5.5 - 8.5	5.5 - 8.5
Maximum Influent Particle Size (micron)	20	20	20
Absolute Filtration Size (micron)	N/A	N/A	N/A
Maximum Influent Iron Level (ppm)	0.3	0.3	0.3
Maximum Influent Manganese Level (ppm)	0.05	0.05	0.05
Water Pressure Range (psi)	45 - 75	45 - 75	45 - 75
Maximum Inlet Pipe Size	1"	1"	1"
Dimension A - Overall System Height	57"	57"	68"
Dimension B - System Piping Height	56.09"	56.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	65"
Dimension D - Pressure Vessel Diameter	10"	13"	14"
Shipping Weight (lbs)	70	88	105

Crusader Iron Filter

The Crusader Iron Filter incorporates proprietary filtration media and is capable of removing iron, manganese, & hydrogen sulfide in water at flow rates up to 30 gpm.

Operation of the Filter

Water can contain Iron (Fe), Manganese (Mn), and Hydrogen Sulfide (H₂S). Soluble iron and manganese are oxidized and precipitated by contact with higher oxides of manganese on the proprietary blend of oxidation media. Hydrogen Sulfide is oxidized into an insoluble sulfur precipitate. Precipitates are filtered, retained, and then removed by vigorous back-washing. When the oxidizing capacity of the media is exhausted, the system has to be regenerated with a weak potassium permanganate (KMnO₄) solution. 1.5 - 2 Oz. of KMnO₄ per cubic foot of media is generally required for proper regeneration.

Filtration Media

The media is specially formulated using a lightweight, synthetic granular core, which is coated with manganese dioxide. The proprietary media acts through both oxidation & physical filtration. The filtration system also includes a food-grade, FDA-approved gravel under-bedding to ensure uniform flow and consistent performance.

Controller/Meter

Regeneration of the system is initiated by a simplified electronic control timer, which electronically meters water flow to the home and makes decisions to regenerate based on water consumption and program settings.

Regeneration

These iron filters are controlled electronically. A fully programmable microprocessor controls Tank Fill, Upflow Regenerant Draw, Slow Rinse, Double Backwash, Rapid Rinse, Tank Fill, and Return-to-Service cycles.

Control Valve

A hydraulically balanced piston slides effortlessly through seals & spacers. All parts in the waterway are either coated brass or composite Noryl® materials to ensure a long and reliable service life.

Media Tank

All models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty.

Regenerant Tank

A 10" x 16" regenerant tank is included as part of the system. The tank is a combination saturator and regenerant storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra regenerant storage capacity, if required. Regenerant tanks feature a grid plate for maximum saturation of regenerant.

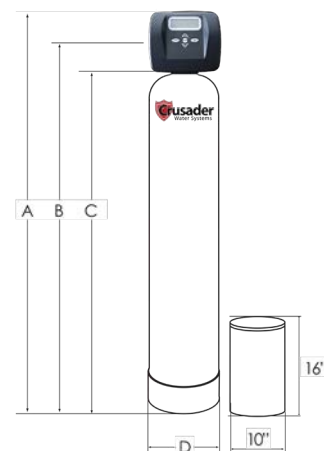
Regenerant System

Regenerant refill is automatically controlled by the computer to provide the exact amount of regenerant for each cleaning cycle. The regenerant system has a float and safety valve shut-off, which minimizes the chance of overflowing the regenerant tank. All units are equipped with an air check.

These filters should only be purchased after a water analysis has been completed. The following criteria should be screened: Iron, Manganese, Hydrogen Sulfide, TDS, pH, Oil, and Polyphosphate.

www.crusaderwater.com

Commercial Iron Filter



Crusader Iron Filter

	CS-FE-1	CS-FE-2	CS-FE-3
Maximum System Capacity (ppm)	10,000	20,000	30,000
Economy System Capacity (ppm)	7,000	14,000	21,000
KMnO ₄ Used Per Regeneration (Maximum) Oz.	2.0	4.0	6.0
KMnO ₄ Used Per Regeneration (Economy) Oz.	1.5	3.0	4.5
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	10	20	30
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	3	5	8
Maximum Influent Iron Level (ppm)	20	20	20
Maximum Influent Manganese Level (ppm)	5	5	5
Operating pH Range	6.8 - 9.5	6.8 - 9.5	6.8 - 9.5
Water Pressure Range (psi)	45 - 75	45 - 75	45 - 75
Maximum Inlet Pipe Size	1"	1"	1.25"
Dimension A - Overall System Height	61.25"	61.25"	72.25"
Dimension B - System Piping Height	56.09"	56.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	65"
Dimension D - Pressure Vessel Diameter	10"	13"	14"
Shipping Weight (lbs)	115	215	305

Crusader MM-OX

The Crusader Multimedia Oxidizing Filter incorporates proprietary filtration media and is capable of removing iron, manganese, & hydrogen sulfide in water at flow rates up to 20 gpm.

Operation of the Filter

Water can contain Iron (Fe), Manganese (Mn), and Hydrogen Sulfide (H₂S). Soluble iron and manganese are oxidized and precipitated by contact with higher oxides of manganese on the proprietary blend of oxidation media. Hydrogen Sulfide is oxidized into an insoluble sulfur precipitate. Precipitates are filtered, retained, and then removed by vigorous back-washing. When the oxidizing capacity of the media is exhausted, the system has to be regenerated and sparged with ambient air, which makes it environmentally friendly.

Filtration Media

The media is specially formulated using a lightweight, synthetic granular core, which is coated with manganese dioxide. The proprietary media acts through both oxidation & physical filtration. The filtration system also includes a food-grade, FDA-approved gravel under-bedding to ensure uniform flow and consistent performance.

Controller/Meter

Regeneration of the system is initiated by a simplified electronic control timer, which electronically meters water flow to the home and makes decisions to regenerate based on water consumption and program settings.

Regeneration

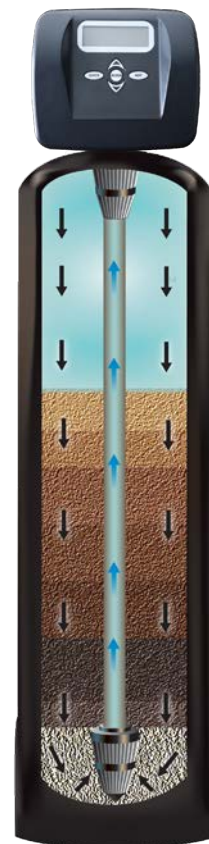
These iron filters are controlled electronically. A fully programmable microprocessor controls Upflow Ambient Air Injection, Slow Rinse, Backwash, Rapid Rinse, Tank Fill, and Return-to-Service cycles.

Control Valve

A hydraulically balanced piston slides effortlessly through seals & spacers. All parts in the waterway are either coated brass or composite Noryl® materials to ensure a long and reliable service life.

Media Tank

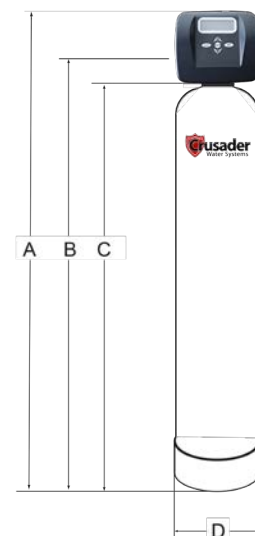
All models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty.



These filters should only be purchased after a water analysis has been completed. The following criteria should be screened: Iron, Manganese, Hydrogen Sulfide, TDS, pH, Oil, and Polyphosphate.

www.crusaderwater.com

Commercial Oxidizing Filter



Crusader Multimedia Oxidizing Filter

	CS-MM-OX-1	CS-MM-OX-2	CS-MM-OX-3
Maximum System Capacity (ppm)	10,000	20,000	30,000
Economy System Capacity (ppm)	7,000	14,000	21,000
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	10	15	20
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	8	12	16
Maximum Influent Iron Level (ppm)	10	10	10
Maximum Influent Manganese Level (ppm)	1	1	1
Operating pH Range	6.2 - 9.5	6.2 - 9.5	6.2 - 9.5
Water Pressure Range (psi)	45 - 75	45 - 75	45 - 75
Maximum Inlet Pipe Size	1"	1"	1.25"
Dimension A - Overall System Height	61.25"	61.25"	72.25"
Dimension B - System Piping Height	56.09"	56.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	65"
Dimension D - Pressure Vessel Diameter	10"	13"	14"
Shipping Weight (lbs)	110	210	290

Crusader Multimedia Sediment Filter

The Crusader multimedia sediment filter incorporates proprietary blends of filtration media to ensure effective reduction of select contaminants and is custom engineered based on the results of a comprehensive water analysis.

Operation of the Filter

These filters are custom engineered and built to order based on the results of a comprehensive water analysis. This filter is a true multimedia depth filter that incorporates two or more types of media and gravel underbedding. Multi-media filtration is a proven design concept; the coarse media layers in the top of the tank trap large particulates and successively smaller particles are trapped in the finer layers of media deeper in the bed. Reduction takes place throughout the entire bed instead of the top layer as is the norm in traditional sediment filters. Multi-media depth filters typically remove particulates in the 5 - 100 micron range - depending on the specified engineered design. Correct layering and media selection is critical. All media are selected according to particle size and density so the media is able to self-classify during backwash.

Filtration Media

The proprietary blend of mechanical filtration media could include Filter Aggregate, Anthracite, Filter Sand, KDF-55, KDF-85, Calcite, Garnet, NextSand, and a food-grade gravel under bedding to ensure uniform flow, minimum pressure drop, and uniform performance. Each filter is engineered specifically for your project.

Controller/Meter

Regeneration of the system is initiated by a simplified electronic control timer, which electronically meters filtered water flow and makes decisions to clean based on water consumption and program settings.

Regeneration

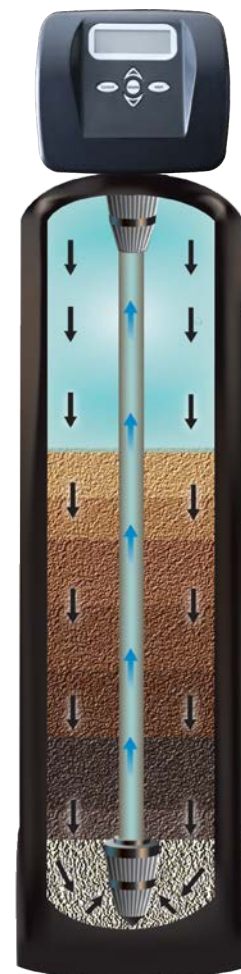
These filter models are controlled electronically. A fully programmable microprocessor controls Backwash, Rapid Rinse, and Return-to-Service cycles.

Control Valve

A hydraulically balanced piston slides effortlessly through seals & spacers. All parts in the waterway are either coated brass or composite Noryl® materials to ensure a long and reliable service life.

Media Tank

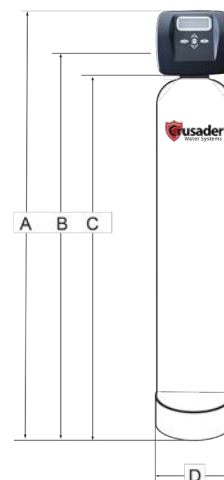
All filter models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty.



These filters should only be purchased after a water analysis has been completed. The following criteria should be determined: Iron, Manganese, Hydrogen Sulfide, TDS, pH, Hardness, and Turbidity.

www.crusaderwater.com

Commercial Sediment Filter



Crusader Multimedia Sediment Filter

	CS-MM-CLR-1	CS-MM-CLR-2	CS-MM-CLR-3
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	18	25	30
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	12	15	18
Operating pH Range	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5
Maximum Influent Particle Size (micron)	200	200	200
Nominal Filtration Size (micron)	5	5	5
Maximum Influent Iron Level (ppm)	10	10	10
Maximum Influent Manganese Level (ppm)	5	5	5
Water Pressure Range (psi)	45 - 75	45 - 75	45 - 75
Maximum Inlet Pipe Size	1"	1.25"	1.25"
Dimension A - Overall System Height	61.25"	61.25"	72.25"
Dimension B - System Piping Height	56.09"	56.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	65"
Dimension D - Pressure Vessel Diameter	10"	13"	14"
Shipping Weight (lbs)	110	210	290

These filters should only be purchased after a water analysis has been completed.
The following criteria should be determined: Iron, Manganese, Hydrogen Sulfide,
TDS, pH, Hardness, and Turbidity.

Crusader pH Neutralizing Filter

The Crusader pH Neutralizing filter is designed to neutralize acidic water conditions and is custom engineered based on the results of a comprehensive water analysis on a case-by-case basis.

Operation of the Filter

These filters are custom engineered and built to order based on the results of a comprehensive water analysis. Crusader pH Neutralizing filters are used where low pH water is a problem. Naturally occurring acidic water and potable drinking water, such as that produced by Reverse Osmosis, can be effectively neutralized by using special neutralizing media. The media will require periodic replacement as it is consumed in the neutralization process. Calcium and magnesium carbonates are introduced into the ionic makeup of the water during neutralization, which may necessitate the installation of a water softener to reduce the hardness of the water.

Filtration Media

A mixture of Calcite and Corosex allows for correction of extremely acidic water. The two media are combined together to provide a uniform neutralization rate. A food-grade gravel under bedding minimizes pressure drop and ensures uniform performance. If pH is less than 5.7, chemical injection will be required in addition to this filter. The system is backwashed periodically to prevent agglomeration. Waters with very low total alkalinity might require additional treatment depending on the specific application.

Controller/Meter

Regeneration of the system is initiated by a simplified electronic control timer, which electronically meters filtered water flow and makes decisions to clean based on water consumption and program settings.

Regeneration

These filter models are controlled electronically. A fully programmable microprocessor controls Backwash, Rapid Rinse, and Return-to-Service cycles.

Control Valve

A hydraulically balanced piston slides effortlessly through seals & spacers. All parts in the waterway are either coated brass or composite Noryl® materials to ensure a long and reliable service life.

Media Tank

All filter models feature a non-corrosive fiberglass tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty.

NOTE: The CS-PH-1 is a non-backwashing model to be operated in UPFLOW SERVICE mode only. It does not flush automatically and requires no electricity or drain.

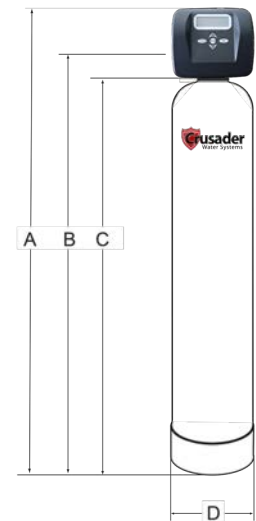
These filters should only be purchased after a water analysis has been completed. The following contaminants should be tested: Iron, Manganese, Hydrogen Sulfide, TDS, pH, Hardness, Turbidity, and Total Alkalinity.

www.crusaderwater.com

Commercial pH Neutralizing Filter



NOTE: The CS-PH-1 is a non-backwashing model to be operated in UPFLOW SERVICE mode only. It does not flush automatically and requires no electricity or drain.



Crusader pH Neutralizing Filter

	CS-PH-1	CS-PH-2	CS-PH-3
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	15	25	30
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	10	15	18
Operating pH Range	3.0 - 8.5	3.0 - 8.5	3.0 - 8.5
Maximum Influent Particle Size (micron)	200	200	200
Nominal Filtration Size (micron)	50	50	50
Maximum Influent Iron Level (ppm)	10	10	10
Maximum Influent Manganese Level (ppm)	5	5	5
Water Pressure Range (psi)	45 - 75	45 - 75	45 - 75
Maximum Inlet Pipe Size	1"	1"	1.25"
Dimension A - Overall System Height	61"	61"	72"
Dimension B - System Piping Height	56.09"	56.09"	67.09"
Dimension C - Pressure Vessel Height	54"	54"	65"
Dimension D - Pressure Vessel Diameter	10"	13"	14"
Shipping Weight (lbs)	110	230	310

These filters should only be purchased after a water analysis has been completed. The following contaminants should be tested: Iron, Manganese, Hydrogen Sulfide, TDS, pH, Hardness, Turbidity, and Total Alkalinity.

www.crusaderwater.com

Crusader Anion Filter

The Crusader Anion filter is designed to address a particular ionic range of compounds such as Nitrate, Sulfates, and excess Alkalinity. Systems are loaded with Strong Base Anion resin in the Chloride form.

Operation of the Filter

Water can contain a number of contaminants such as Nitrate Sulfate, and excess Alkalinity. These contaminants are particularly difficult to remove from water and can often have serious aesthetic & health effects. This filter is designed to remove various contaminants from water based on a comprehensive water analysis.

Filtration Media - Hydrolyte Anion Hybrid

The exchange media is a high quality, FDA-certified, commercial-grade strong base Type II Anion Resin with a very high whole bead count and no color throw or odor when properly specified, installed, and regenerated. The media combines high operating capacity with excellent chemical and physical stability to ensure a long, dependable life.

Controller/Meter

Regeneration of the system is initiated by a simplified electronic control timer, which electronically meters filtered water flow and makes decisions to regenerate based on water consumption and program settings.

Regeneration

These filter models are controlled electronically. A fully programmable microprocessor controls Upflow Regeneration, Backwash, Rapid Rinse, Tank Fill, and Return-to-Service cycles.

Control Valve

A hydraulically balanced piston slides effortlessly through seals & spacers. All parts in the waterway are either coated brass or composite Noryl® materials to ensure a long and reliable service life on 3 cubic foot systems.

Resin & Brine Tanks

All models feature a non-corrosive fiberglass resin tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL, and the FDA. It also meets WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty. A high capacity brine tank is included as part of the system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required.

Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine for each regeneration. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

Sodium Hydroxide (Caustic)

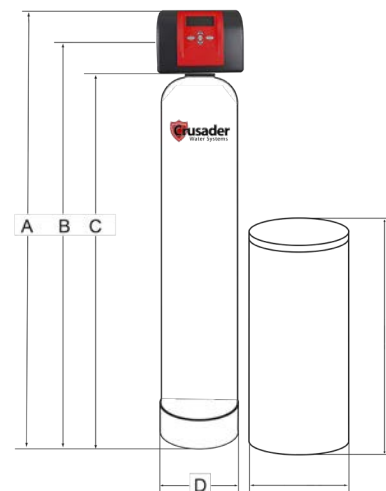
NaOH feed systems are available that dose caustic into the brine with a direct interface to the system controller. This helps to improve throughput in dealkalization applications. 0.33 lbs of NaOH is injected per ft³ of Anion Resin.

These filters should only be purchased after a water analysis has been completed.

The following contaminants should be tested: **Iron, Manganese, Hydrogen Sulfide, TDS, pH, Hardness, Chlorine, Chloramine, Sulfate, Nitrate, Silica, Fluoride, Tannins, Lignins, Total Alkalinity, and Turbidity.**

www.crusaderwater.com

Commercial Anion Filter



Crusader Anion Filter

	CS-ANION-1	CS-ANION-2	CS-ANION-3
Maximum Capacity (Kgr or CaCO ₃)	10,000	20,000	30,000
Salt Used Per Cleaning (lbs)	5	10	15
Maximum Influent Hardness Level (gpg)	5	5	5
Maximum Influent Chlorine Level (ppm)	0.1	0.1	0.1
Service Flow Rate (gpm) @ 55 psi inlet, 15 psi drop	3	6	9
Water Pressure Range (psi)	45 - 75	45 - 75	45 - 75
Maximum Inlet Piping Size	1"	1"	1"
Dimension A - Overall System Height	61	61	59
Dimension B - System Piping Height	56.09	56.09	54.09
Dimension C - Pressure Vessel Height	54	54	52
Dimension D - Pressure Vessel Diameter	10	10	12
Total Space Required L x W x H (Inches)	18 x 29 x 61	18 x 29 x 61	18 x 31 x 59
Shipping Weight (lbs)	90	115	180

These filters should only be purchased after a water analysis has been completed.

The following contaminants should be tested: **Iron, Manganese, Hydrogen Sulfide, TDS, pH, Hardness, Chlorine, Chloramine, Sulfate, Nitrate, Silica, Fluoride, Tannins, Lignins, Total Alkalinity, and Turbidity.**

www.crusaderwater.com

Crusader Nitrate Filter

The Crusader Nitrate filter is designed to address Nitrates in Potable Water with a decreased selectivity for sulfates. This results in higher operating capacity, lower leakage, and freedom from nitrate dumping if operated past the sulfate break. It is highly resistant to organic fouling.

Operation of the Filter

Water can contain a number of contaminants such as Nitrate Sulfate and excess Alkalinity. These contaminants are particularly difficult to remove from water and can often have serious aesthetic & health effects. This filter is designed to remove various contaminants from water based on a comprehensive water analysis.

Filtration Media - Hydrolyte Anion Hybrid Macroporous Nitrate-Select

The exchange media is a high quality, FDA-certified, commercial-grade strong base hybrid (Anion) Functional Matrix resin with a very high whole bead count and no color throw or odor when properly specified, installed, and regenerated. The media combines high operating capacity with excellent chemical and physical stability to ensure a long, dependable life. This resin is engineered with high selectivity for Nitrate and reduced selectivity for Sulfate. This provides a higher operating capacity, lower leakage, and less potential for Nitrate dumping when operated past the sulfate break.

Controller/Meter

Regeneration of the system is initiated by a simplified electronic control timer, which electronically meters filtered water flow and makes decisions to regenerate based on water consumption and program settings.

Regeneration

These filter models are controlled electronically. A fully programmable microprocessor controls Upflow Regeneration, Backwash, Rapid Rinse, Tank Fill, and Return-to-Service cycles.

Control Valve

A hydraulically balanced piston slides effortlessly through seals & spacers. All parts in the waterway are either coated brass or composite Noryl® materials to ensure a long and reliable service life on 3 cubic foot systems.

Resin & Brine Tanks

All models feature a non-corrosive fiberglass resin tank with a one-piece thermoplastic inner liner. The tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. The tank is approved by NSF, UL and the FDA. It also meets WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty. A high capacity brine tank is included as part of the system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required.

Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine for each regeneration. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

Sodium Hydroxide (Caustic)

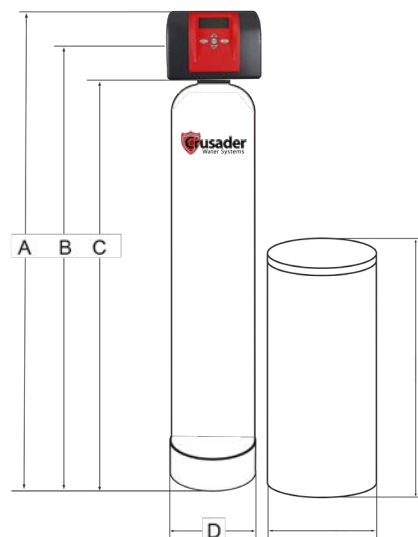
NaOH feed systems are available that dose caustic into the brine with a direct interface to the system controller. This helps to improve throughput in dealkolization applications. 0.33 lbs of NaOH is injected per ft³ of Anion Resin.

These filters should only be purchased after a water analysis has been completed.

The following contaminants should be tested: **Iron, Manganese, Hydrogen Sulfide, TDS, pH, Hardness, Chlorine, Chloramine, Sulfate, Nitrate, Silica, Fluoride, Tannins, Lignins, Total Alkalinity and Turbidity.**

www.crusaderwater.com

Commercial Nitrate Filter



Crusader Nitrate Filter

	CS-NITRATE-1-NSK	CS-NITRATE-1-NS	CS-NITRATE-2
Maximum Capacity (As CaCO ₃)	6,000	6,000	12,000
Salt Used Per Cleaning	15	15	30
Maximum Influent Hardness Level (gpg)	5	5	5
Maximum Influent Chlorine Level (ppm)	0.1	0.1	0.1
Peak Flow Rate (gpm) @ 75 psi inlet, 25 psi drop	15	18	25
Peak Nitrate Reduction Rate			
Water Pressure Range (psi)	45 - 75	45 - 75	45 - 75
Maximum Inlet Pipe Size	1.25"	1.25"	1.25"
Dimension A - Overall System Height	42"	61"	59"
Dimension B - System Piping Height	37.09"	56.09"	54.09"
Dimension C - Pressure Vessel Height	35"	54"	52"
Dimension D - Pressure Vessel Diameter	10"	10"	12"
Total Space Required L x W x H	18 x 31 x 42	18 x 29 x 61	18 x 31 x 59
Shipping Weight (lbs)	85	95	145

The following contaminants should be tested: **Iron, Manganese, Hydrogen Sulfide, TDS, pH, Hardness, Chlorine, Chloramine, Sulfate, Nitrate, Silica, Fluoride, Tannins, Lignins, Total Alkalinity and Turbidity.**

www.crusaderwater.com

Crusader Twin Anion

The Crusader Twin Anion filter is designed to address a particular ionic range of compounds such as Fluoride, Nitrate, Sulfate, Tannins, and Alkalinity. Redundant treatment can be performed at flow of up to 50 gpm.

Operation of the System

Water can contain a number of contaminants such as Fluoride, Nitrate Sulfate, Silica & Tannins. These contaminants are particularly difficult to remove from water and can often have serious aesthetic & health effects. This filter is designed to remove various contaminants from water based on a comprehensive water analysis and site-specific configuration.

Filtration Media - Hydrolyte Anion Hybrid

The exchange media is a high quality, FDA-certified, commercial-grade strong base hybrid (Anion) Functional Matrix resin with a very high whole bead count and no color throw or odor when properly specified, installed, and regenerated. The media combines high operating capacity with excellent chemical and physical stability to ensure a long, dependable life.

Controller/Meter

Regeneration of the system is initiated by a simplified electronic control timer, which electronically meters filtered water flow and makes decisions to regenerate based on water consumption and program settings.

Regeneration

A fully programmable microprocessor controls Tank Alternation, Ion Exchange, Backwash, Rapid Rinse, Tank Fill, and Return-to-Service cycles.

Control Valve

Two hydraulically balanced and coated pistons utilize a composite drivetrain within a lead-free brass body. All moving parts in the waterway are either coated brass or composite Noryl® materials to ensure a long and reliable service life.

Resin Tanks

All models feature two non-corrosive fiberglass tanks with one-piece thermoplastic inner liners. Each tank has a maximum working pressure of 90 psi and a working temperature up to 120°F. Each tank is approved by NSF, UL, and the FDA. They also meet WQA Standard S-100, and all fiberglass tanks carry a limited lifetime warranty.

Brine Tank

A high capacity brine tank is included as part of the system. The brine tank is a combination brine maker and salt storage vessel and is made of tough, high-density polyethylene. Larger tanks are available for extra salt storage capacity, if required.

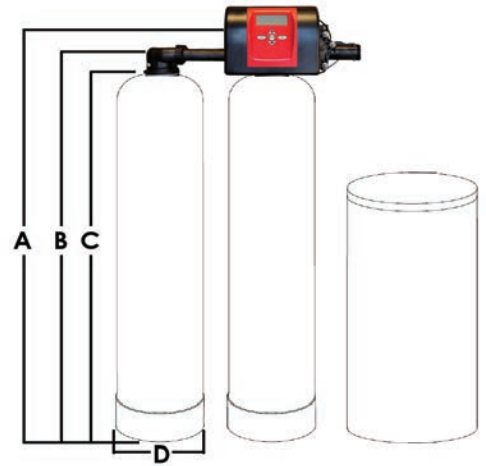
Brine System

Brine refill is automatically controlled by the computer to provide the exact amount of brine required for each regeneration cycle. The Brine System has a float and safety valve shut-off, which minimizes the chance of overflowing the brine tank. All units are equipped with an air check.

ProGuard & ProGuard Plus

A high efficiency ProGuard reservoir is included with this system to ensure peak performance, maximize efficiency, and provide the highest level of protection from inorganic metals and minerals.

Commercial Anion Filter



Crusader Twin Anion Filtration System

	CS-ANION-1T	CS-ANION-2T	CS-ANION-3T	CS-ANION-4T	CS-ANION-5T	CS-ANION-6T
Max Capacity/Tank (Grains - CaCO ₃)	10,000	15,000	20,000	30,000	40,000	50,000
Salt Used Per Cleaning (lbs)	5	7.5	10	15	20	25
Peak Flow Rate (gpm)	3	4	6	8	10	13
Inlet Pipe Size	1"	1"	1"	1"	1"	1"
Tank Diameter (each)	10"	10"	12"	13"	14"	14"
Overall Height	61"	61"	59"	61"	72"	72"
Total Space Required L x W x H (Inches)	18 x 41 x 61	18 x 41 x 61	18 x 45 x 59	18 x 47 x 61	18 x 49 x 72	18 x 49 x 72
Shipping Weight (lbs)	180	230	350	450	625	750

Crusader Shield Series

The Crusader Shield Series is an infinitely upgradable and customizable water filtration system that can protect from sediment; heavy metals (including lead); chemicals (PFAS, pesticides); chlorine and chloramine; bacteria; cysts; parasites; and even hard water scale depending on the chosen filters.

Crusader Shield - Your First Line of Defense

S - Scalable

Crusader Shield Water Filtration Systems are infinitely versatile and can be scaled to any project size and type.

H - High Flow

Crusader Shield Filters have a large surface area and are made of innovative materials that offer a unique combination of efficiency, capacity, flow rate, and low pressure drop.

I - Intelligent

Crusader Shield Filtration Systems are an intelligent solution because they are easy to install, lightweight, and cost effective in addition to their high chemical compatibility.

E - Efficient

Crusader Shield Filters are designed to maximize surface area in a non-woven matrix that creates an electro-positively charged depth filter media that maximizes efficiency while minimizing microbe growth.

L - Low Maintenance

Crusader Shield Filters are easy to install and replace. Replacing the filters is hassle-free and doesn't require any tools due to its ergonomic snap-ring design. These systems also don't require any chemicals to operate, which makes them very easy to maintain!

D - Durable

Crusader Shield Filters are 100% made in the USA with the highest quality components and are third-party tested and certified for safety and performance in materials and filter effectiveness.



Crusader's Shield Series Filtration Systems are engineered and manufactured with rigorous quality control and environmental sustainability standards throughout production.

www.crusaderwater.com

Crusader Shield is easy to maintain! No Tools Required



1. Press Red Pressure Relief Valve

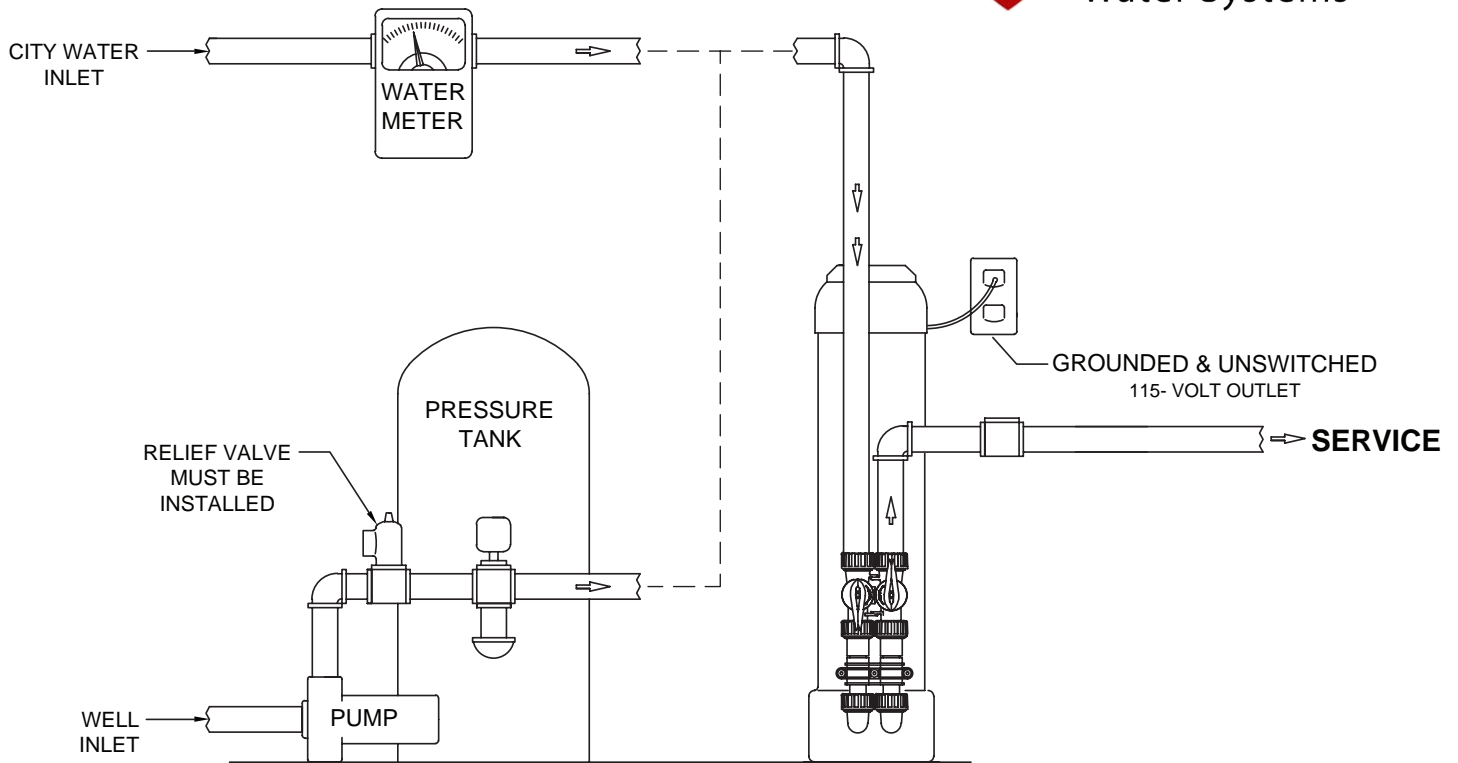
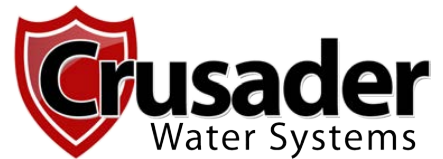


2. Pull Snap Ring



3. Lift Top Cap

Where to Install:



Crusader Shield Sediment Filtration

Crusader Shield Sediment filters are available in Dual-Gradient Pleated and Spun options to allow maximum flexibility in filtration applications from 1 to 50 micron at flow rates of up to 20 gpm.

Dual Gradient Double Pleated Filters

These filters are designed for extended life and use, with two distinct pleated layers - a protective outer layer and a selective inner layer. This structure, combined with a surface area of approximately 100ft² provides a greatly improved service life while achieving high flow rates with low pressure drop.

Dual Gradient Spun Yarn Filters

These filters are designed for extended life and use, with two distinct yarn layers - a protective outer layer and a selective inner layer.

Features & Benefits

- Dual gradient, double pleated filters for improved service life, contaminant removal, and dirt holding capacity
- Huge surface area to promote high flow rates, low pressure loss, and reduced cartridge replacement frequency
- Double Buna-N O-ring seals to ensure no bypass of contaminants and high chemical compatibility
- Filter belly bands (on select models) prevent collapsing of filters under high flow or contaminant load applications.
- Durable polyester filter and polypropylene cap construction for superior bacteria and chemical resistance

Applications

- | | | |
|---------------------|------------------|----------------------------|
| - Drinking Water | - Food/Beverage | - Plating Solutions |
| - Reverse Osmosis | - Cooling Towers | - Corrosive Fluids |
| - Rainwater Harvest | - Wastewater | - Ponds and Water Features |



Crusader Shield Platform Dimensions:

Width: 8"

Tank Height: 40" & 44" with Onboard Monitor

Vertical Space Required for Cartridge Replacements: 70" off the floor

www.crusaderwater.com

Crusader Shield Sediment Filtration

Pleated



Spun Yarn



Crusader Shield Sediment Double Pleated Filters	CT-20xNanoAl-AG	CT-10x5	CT-20x10	CT-50x20
Peak Flow Rate (GPM)	15	30	30	30
Service Flow Rate (GPM)	10	20	20	20
External Filter Filtration Level (Microns)	20	10	20	50
Internal Filter Filtration Level (Microns)	1	5	10	20

Crusader Shield Sediment Spun Yarn Filters	CT-5020-SWMB	CT-2005-SWMB
Peak Flow Rate (GPM)	30	30
Service Flow Rate (GPM)	20	20
External Filter Filtration Level (Microns)	20	50
Internal Filter Filtration Level (Microns)	5	20

Crusader Shield Chlorine & Chloramine

Crusader Shield Chlorine and Chloramine Filters use advanced carbon block technology that is highly effective at reducing bad taste & odor, chloramine, and chlorine in potable drinking water with filtration applications of 3 and 20 microns depending on the model selected.

Operation of the Filters & Composition

Crusader Shield Chloramine Filters are comprised of a proprietary media that contains a large amount of catalytically active Nitrogen Groups, which maximizes its chloramine-reduction capacity. This filter has 5 times more capacity for chloramine reduction than industry standard carbon blocks. Our standard chlorine filters are made of highly-activated sustainable carbon.

Features

- Comprised of high-performance carbon and an outer wrap of Polyethylene
- Made with FDA-approved materials and NSF 61 Certified Coconut Shell carbon, California Prop 65 Compliant
- Minimal pressure drop

Benefits

- High chlorine/chloramine-catching and dirt-holding capacity
- Excellent contaminant reductions
- Lightweight, easy-to-install, and easy-to-maintain

Applications

- Ideal as polishing or pre-filters in applications requiring fine filtration and high capacity
- Ideal for Residential, Commercial, Industrial, or Food Service Applications
- Effective at reducing unwanted bad taste and odor along with chlorine and chloramine tastes and odors from potable drinking water



Crusader Shield Chlorine & Chloramine Filtration	CT-03-CB	CT-20-CB	CT-03-CB-AMINE
Peak Flow Rate (GPM)	20	30	25
Service Flow Rate (GPM)	20	25	20
Carbon Block Filtration Level (Microns)	3	20	3
Filter Type	High Capacity	High Porosity & Low Pressure Drop	Chloramine Reduction

Crusader Shield Scale Control

Crusader Shield Scale Control Filters incorporate Active Armour technology to provide proven protection against Scale and Corrosion at flow rates of up to 25 GPM.

ACTIVE ARMOUR IS YOUR FIRST LINE OF DEFENSE IN REDUCING HARDNESS SCALE, PREVENTING CORROSION, AND PROTECTING PIPING & APPLIANCES

While not a Water Softening technology, Active Armour system recommended for use with tank-less water heaters, tank-type water heaters, reverse osmosis purifiers, nanofilters, ultrafilters, ice machines, coffee and vending machines, food service equipment, humidifiers, air conditioning equipment, and many other types of water processing equipment affected by calcium carbonate scale or potentially corrosive water conditions.

SIMPLE, SAFE AND COST-EFFECTIVE:

- Bonds with Hard Water compounds like Calcium and Magnesium Carbonates
- Bonds with inorganic metals in the water like Iron, Copper, and Zinc
- Inhibits the ability of Carbonate scale to form in the plumbing system and appliances
- Prevents corrosion of metallic pipes, appliances, and fixtures with a protective nanolayer
- Reduces existing scale formation without using acid or dangerous chemicals
- Increases heating efficiency and reduces maintenance



Crusader Active Armour Plus Provides Additional Water Conditioning

Crusader Active Armour Plus contains additional Filtration Media that further conditions the water. ChlorZorb & the catalytic activator work together in synergy to effectively address chlorine, pesticides, herbicides, tastes, odors, and disinfection byproducts. Food-grade gravel under-bedding ensures uniform flow, minimal pressure drop, and consistent performance.

Crusader Shield Scale Control	CT-AA-225	CT-AAP-225	CT-AA-300	CT-AAP-300
Peak Flow Rate (GPM)	25	25	25	25
Service Flow Rate (GPM)	20	18	20	18
Dosage Rate (mg/c)	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0
Projected Lifespan (Gallons)	120,000	120,000	250,000	250,000

www.crusaderwater.com

Crusader Shield Health Related Contaminants

Crusader Shield Health Related Contaminant Filters are effective at removing 99.95% of both particulate and soluble lead, PFOA, PFOS, cysts, chlorine, chloramine, and other particulates up to .5 microns.

Operation of the Filters & Composition

Crusader Shield Health Related Contaminants Filters are comprised of a proprietary, highly activated and sustainable carbon media that safely and effectively removes 99.95% of lead, PFOA, PFOS, cysts (Giardia and Crypto), chlorine, and chloramine. These filters are installed at the point of entry to effectively provide safe drinking water throughout a residence.

Features

- Comprised of high-performance carbon and an outer wrap of Polyethylene
- Made with FDA-approved materials and NSF 61 Certified Coconut Shell carbon
- California Prop 65 Compliant
- Minimal pressure drop

Benefits

- High chlorine/chloramine-catching and dirt-holding capacity
- Captures both soluble and particulate lead
- Excellent contaminant reductions
- Lightweight, easy-to-install, and easy-to-maintain

Applications

- Ideal for point of entry residential applications
- Effective at reducing unwanted contaminants, bad taste/odor, and chlorine/chloramine tastes and odors from potable drinking water

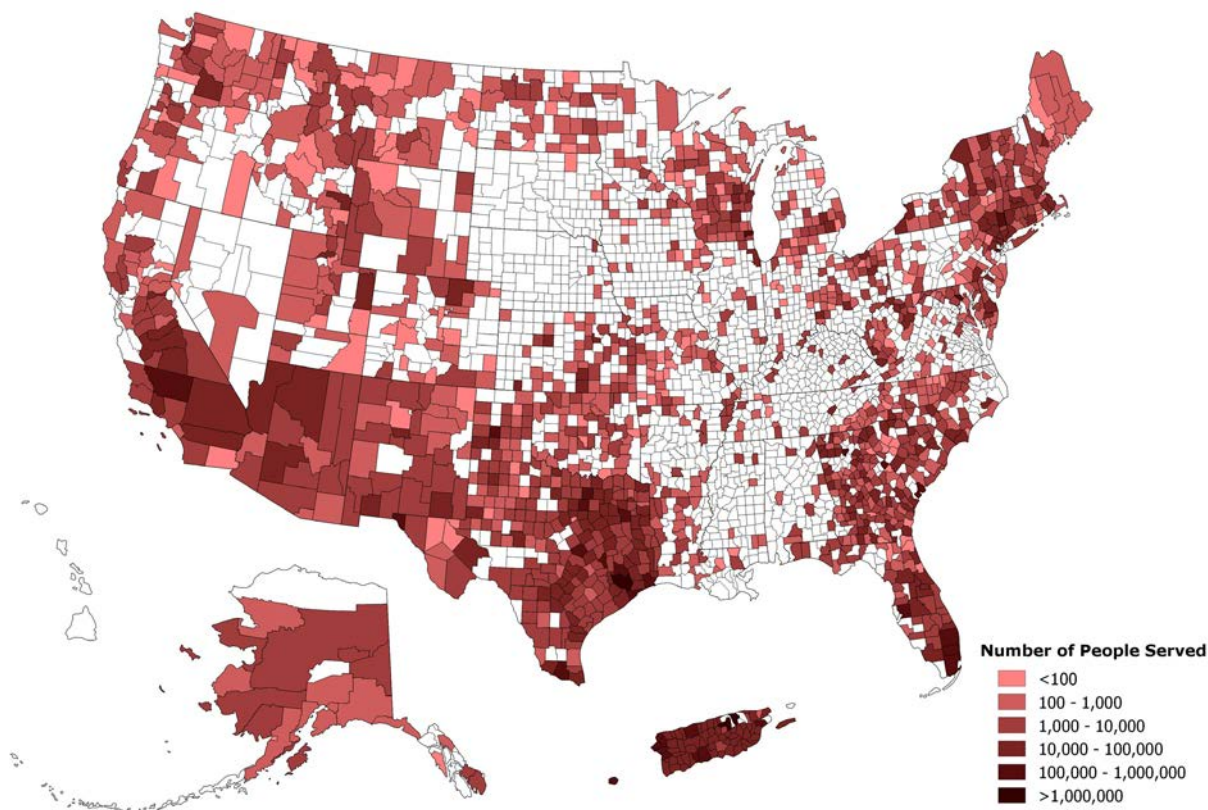


Crusader Shield Health Related Contaminants Filter	CT-0-CB-AMCYL
Peak Flow Rate (GPM)	8
Service Flow Rate (GPM)	5
Carbon Block Filtration Level (Microns)	0.5
Lead Removing Capacity	>88,000 Gallons @ 8 gpm

Crusader Shield Health Related Contaminants

Why Remove Lead?

Prior to 1986, more than 70% of US cities used lead-based piping infrastructure to convey water. Because lead was used in that infrastructure, it can enter drinking water when that piping corrodes--especially in areas that have acidic water or low mineral content. Below is a map showing lead in community water supplies:



Lead is a potent neurotoxin, and persons with lead poisoning can have learning and behavioral problems, hearing loss, slow growth, and hyperactivity. They can also experience symptoms like tiredness, head and stomach aches, and iron deficiencies. According to the American Academy of Pediatrics, there are no effective medical treatments for lead poisoning, and prevention of exposure is recommended. Crusader Shield systems can remove up to 99.95% of both soluble and particulate lead!

Easy to Understand LED Replacement Notifications



Green: Filter Good



Yellow: Change Soon



Red: Change Now

www.crusaderwater.com

Terms & Conditions of Sale

Buyer will pay all invoices within stated terms and agrees to all terms contained in invoices supplied by Crusader Water systems, Inc. These terms may be amended from time to time without notice.

Prices: Prices are F.O.B. Orem, UT. Due to fluctuating petrochemical prices, all prices are subject to change without notice. Goods will be invoiced at the prevailing price at the time merchandise is ordered. Prices & availability can be confirmed through your account representative verbally or in writing. When placing purchases as the result of a written quotation, please reference the quotation number. Prices on purchase orders do not constitute final pricing.

Payment Terms: Payment of merchandise is due upon receipt unless otherwise specified on your invoice. New accounts are strictly COD Cash or Credit card until a credit application has been submitted and approved. In the event of any default or late payment of fees or costs, a penalty/late charge will be imposed at a rate of 2% per month on the unpaid balance together with reasonable collection costs and fees.

Shipping: Unless otherwise specified, we will ship your order in the most expeditious and economical manner. You will be charged for freight, insurance, and handling (as appropriate).

Return of Items: Items cannot be returned without a Return Merchandise Authorization (RMA) number. Please contact your account representative for an RMA. A restocking fee of up to 25% may be applicable to your return. All items must be received within 10 days of RMA issuance. See return policy for more details.

Loss/Damage Liability: Claims for shortage, erroneous charges, or price corrections shall be deemed waived unless made in writing within 10 days of receipt.

Equipment Description & Specifications: Since we are constantly improving and enhancing our products, all equipment descriptions and specifications are subject to change without notice.

Other Products Available: We can provide many other products for special applications which are not listed in this catalog. If you require an item which you do not find listed, please contact us for assistance.

Guarantee: It is our goal to provide extraordinary products and service on a daily basis. If our products do not meet with your satisfaction, please let us know immediately and we promise to make every reasonable effort to remedy the situation.

Warranty: Please see the warranty with each system for further details. We disclaim any implied warranty of fitness for a particular application.



What is Hard Water Costing You?

Items Affected by Hard Water	Average Family Cost		Average Family Savings		Average % Saved
	Per Year	Per Month	Per Year	Per Month	
Plumbing and Appliances Replacement and repairs of pipes, faucets, washer, dishwasher, water heater, etc. <i>Water Quality Research Council Study</i>	\$120.00	\$10.00	\$90.00	\$7.50	75%
Cooking and Coffee Tea, sugar, canning, etc. <i>National Restaurant Association</i>	\$118.56	\$9.88	\$22.44	\$1.87	25%
Personal Care Items Slips, lingerie, etc. <i>American Laundry Institute</i>	\$60.84	\$5.07	\$18.24	\$1.52	30%
Clothing and Linens Washable items such as towels and linens <i>American Laundry Institute</i>	\$600.00	\$50.00	\$175.00	\$15.00	30%
Energy Consumption Heat loss due to scale <i>University of New Mexico and WQA Studies</i>	\$320.00	\$26.67	\$64.44	\$5.37	20%
Soaps and Cleaning Aids Laundry, cleaning, dishwashing, bathing, skin-care, shaving, shampoo, etc. <i>Orange County Consumer Survey (10+ hours of cleaning per month)</i>	\$1,032.00	\$86.00	\$774.00	\$64.50	75%

What Could Soft Water Be Saving You?

TOTAL COSTS AND SAVINGS		
	HARD WATER COST	SOFT WATER SAVINGS
Total Per Day	\$6.25	\$3.19
Total Per Month	\$187.62	\$95.76
Total Per Year	\$2,251.44	\$1,149.12
Total Over 10 Years	\$22,514.40	\$11,491.20
The figures above are national average figures based on a family size of 4 persons with an average water hardness of 10 grains per gallon		