

Water Softener Savings Chart

	Monthly Cost*	Annual Cost*	% SAVED	Monthly Savings	Annual Savings
Plumbing and Appliances Replacement and repairs.	\$10.00	\$120.00	75%	\$7.50	\$90.00
Cooking and Coffee Tea, Sugar and Canning	\$9.83	\$118.00	25%	\$2.46	\$29.50
Clothing and Linens	\$50.00	\$600.00	30%	\$15.00	\$180.00
Energy Consumption (.06 KWH) Heat loss due to scale	\$26.67	\$320.00	20%	\$5.33	\$64.00
Soaps and Cleaning Aids Laundry, cleaning, dish washing, bathing, complexion, shaving, shampoo and rinse *10 or more hours of cleaning per month	\$86.00	\$1,032.00	80%	\$68.80	\$825.60
Totals	\$182.50	\$2190.00		\$99.09	\$1189.10

*Based on an average family of four with 10 gpg water hardness.
Compiled from the following sources: U.S. Department of Commerce, U.S. Department of Labor, National Industrial Conference Board, Water Conditioning Research Council, National Restaurant Association, American Laundry Institute, Orange County California Research Study, U.S. Bureau of Standards, University of Illinois, University of New Mexico.

A Water Softener is the second most Green Item



Fusion XT Equipment is Manufactured and Warranted By:
Nugen Pure Water Systems.
801-785-7010

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Water pseudoscience and quackery
www.chem1.com/cq/

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Fusion XT
EXSTREAM SERIES WATER TREATMENT

Water Touches Almost Everything in Your Home

Where Water Attacks Your Home



- Dishwasher: excessive wear on appliance and on dishes; dishes appear less clean
- Laundry Machine: repair costs increase
- Clothes: harder to clean; don't last as long; stains from water contaminants
- Tub & Shower: hard-to-clean soap scum buildup
- Sinks & Toilets: water spots/stains on porcelain
- Pipes: clogged pipes; decreased flow rate; pH levels can cause pipe erosion
- Water Heater: lower heating efficiency



QUALITY YOU CAN FEEL, & A NAME YOU CAN TRUST



FUSION_{XT}

WHY BUY FUSION XT SERIES?

- Made in the USA
- WQA/NSF-44 Certified
- Meets all plumbing codes
- Limited Lifetime Warranty
- Full flow control valves for high flow applications
- State of the art electronic digital metered controls
- Limited Lifetime Warranty on all major components

CERTIFIED FUSION XT SYSTEM SPECIFICATIONS

SYSTEM	GRAINS	BYPASS	SYSTEM SIZE	BRINE TANK
FUSION XT-32C	32,000	1"	12.5x24x43	1 PIECE CABINET
FUSION XT-48	45,000	1"	11x11x51	15x15x35
FUSION XT-60	60,000	1"	11x11x61	15x15x35
FUSION XT-70	70,000	1"	12x12x59	18x18x40
FUSION XT-90	90,000	1.25"	13x13x61	18x18x40

90k.

70k.

60k.

45 k

32 k.Cabinet

TESTED AND CERTIFIED
Water Quality
NSF/ANSI 44
UNDER INDUSTRY STANDARDS

PRODUCT WARRANTY
NUGEN Pure Water Systems
Congratulations on purchasing one of the finest water conditioning products on the market today.
To the original purchaser your new system carries a comprehensive Manufacturers Warranty.
Warranty only to original owner at original install site

Lifetime Warranty Items:
Mineral Tank, Bypass Tank, and Control Valve body all carry a lifetime non-prorated warranty.

10 Year Warranty Items:
Custom Softening Resin carries a 10-year Warranty.
Service & Labor Charges not included.

5 Year Warranty Items:
All Digital & Mechanical Parts carry a 5-year Warranty.
Service and labor charges not included.

Nugen will repair or replace defective part at manufacturers option, provided the part is returned to Nugen Pure Water Systems Inc. freight prepaid. All service must be done by an authorized technician. Service and labor charges not included.

Maximum Replacement Charges:
Your warranty provides for a MAXIMUM replacement charge PER item of \$100.00(dollars) for any additional system parts not covered under the Life Time Warranty section of the Warranty. All parts being replaced or repaired must be returned freight prepaid to Nugen Pure Water Systems Inc. Service and labor charges are not included.

Warranty Exclusions:
• Defective Warranty part or parts will be repaired or replaced at Manufacturers option, F.O.B. London, Utah.
• All Systems must be installed correctly & meet all State & Local Plumbing Codes.
• All Service must be performed by an Authorized Factory Trained Technician.
• This Warranty does not apply to systems that have been neglected, miss-applied or have had hot water back feeding into the system.
• This Warranty does not apply to systems that have been installed on water pressures less than 40-PSI or greater than 90-PSI, or systems that have been installed where sand, silt, turbidity or where excess iron & organics are present in raw water supply.
• Manufacturer is not liable for any freight, loss & damage, service & or labor charges due to a defective part.
• This Warranty does not apply to system damage due to fire, flood, freezing, power surges, brown out, earthquakes or any other natural disasters.

This warranty gives your specific legal rights. You may also have other and additional rights which may vary from state to state by statutory provisions. Nugen Pure Water Systems Inc. Will not be responsible for labor charges, loss, or damages caused by defective part.

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Manufactured by **NUGEN** Pure Water Systems
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FUSION XT SERIES WATER SOFTENING

FUSIONXT

BENEFITS OF FUSIONXT SOFT WATER

- ▶ Protects your entire plumbing system throughout your home
- ▶ Dishes, Silverware & China will sparkle and you'll have a clean coffee maker with no scale or build-up
- ▶ Saves you work, time and money scrubbing the kitchen sink, cutting boards, counter tops, tubs, toilets and shower doors
- ▶ Eliminates hardwater spots and reduces soap scum and residue buildup on showers, tubs and sinks
- ▶ Soft water leaves your skin feeling smoother
- ▶ Hair will be softer and more manageable
- ▶ Reduces soap, shampoo and bathroom cleaner usage by nearly 50%
- ▶ Increases water heater efficiency by almost 30%, and extends the water heater life by many years
- ▶ Improves water flow and pressure by eliminating calcium buildup in pipes
- ▶ Clothes and linens are cleaner, brighter, softer and last longer
- ▶ Adds life to dishwasher, washing machine & all water fixtures
- ▶ Cuts down on laundry detergent, fabric softeners and all cleaning supplies by 50%, saving you money
- ▶ Systems can regenerate with sodium or potassium

NUGEN
Pure Water Systems

THE FUSION XT SOFTENING AND REGENERATION PROCESS

Softwater works by hardwater entering the water softener system. As it passes throughout the resin bed inside the tank the hardwater minerals are attracted and attach to the resin beads, leaving only softened water to service the home.

When the resin becomes saturated with hardwater minerals, the water softener system automatically goes into regeneration. This is the process that frees the resin of hardwater minerals, making it ready to soften the water again. Brine water is drawn into the resin tank and rinses the hardwater minerals off the resin and down the drain. Once the resin is free of hardwater minerals, fresh water rinses the remaining brine water out of the system leaving the system refreshed and ready for service.



Most Plumbing Repairs Are Caused By Hard Water

Scale: an encrusted deposit, generally from dissolved calcium, on the inside of a vessel through which water flows.

Water lines filled with deposits



Leaking Faucets

Clogged Drain Lines



Water Quality Association Independent Study (released April 14 2010) Gas Water Heaters:

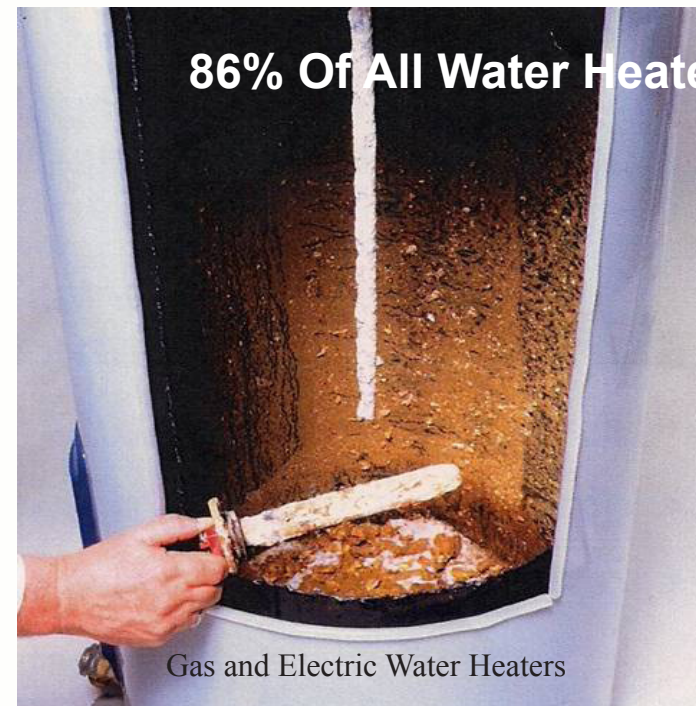
Each five grains per gallon of water hardness causes an 8% loss in efficiency and 8% increase in cost when using 100 gallons of hot water per day in gas storage tank water heater. (On 30 gpd hard water, that is 48% loss of efficiency in water heaters)

Tankless Heaters:

Tankless heaters operated on soft water maintained the original factory efficiency rating over a 15 year life span.

The study found that tankless water heaters completely failed to function because of scale plugging in the down stream plumbing after only 1.6 years of equivalent hot water use. Soft water saves 34% of cost compared to operating on 20 gpg.

86% Of All Water Heater Failures Are Due To Hard Water



Gas and Electric Water Heaters



Tankless Water Heater

Hardness Minerals: Where Problems Begin



The degree of hardness must be perceived from your appliances' point-of-view—the problems with appliances start at minimal hardness levels. Some locations in the United States exceed 100 gpg. Obviously appliances wear out much faster at those levels, but remember that “extreme wear” occurs on any appliance employing water in excess of 10.5 gpg.

Conditioned Water	< 1 gpg
Moderately Hard	1–3.5 gpg
Hard	3.5–7 gpg
Very Hard	7–10.5 gpg
Extremely Hard	> 10.5 gpg

gpg = grains per gallon (of hardness minerals)

Source: Water Quality Association (WQA)



Residential
Reverse Osmosis System

SYSTEM SPECIFICATIONS

The WaterMaker Five reverse osmosis system produces high quality drinking water quickly and easily. The system features hygienically sealed filter cartridges and color-coded fittings for fast installation and easy service. Compared to a traditional RO system, the unique WaterMaker Five delivers 30% more flow from the faucet and the 50 gpd membrane quickly refills the storage tank.

SINGLE CARTRIDGE	Stage 1	Prefilter	20 micron
	Stage 2	Prefilter	GAC
	Stage 3	RO Membrane	50 gpd
	Stage 4	Postfilter	GAC
	Stage 5	Post-tank filter	Inline GAC
System Dimensions			14.5"H x 12"W x 4.75"D



FEED WATER REQUIREMENTS

Total Dissolved Solids (TDS)	<2,500 mg/L (ppm)
Feed Temperature	40° F-100° F
Feed Pressure	40-80 psi
Turbidity	<1 NTU
Silt Density Index	<5
pH	4-9
Chlorine	<1.0 mg/L (ppm)

Feed water must be potable. Must be free of potential membrane foulants such as iron, hydrogen sulfide and manganese.



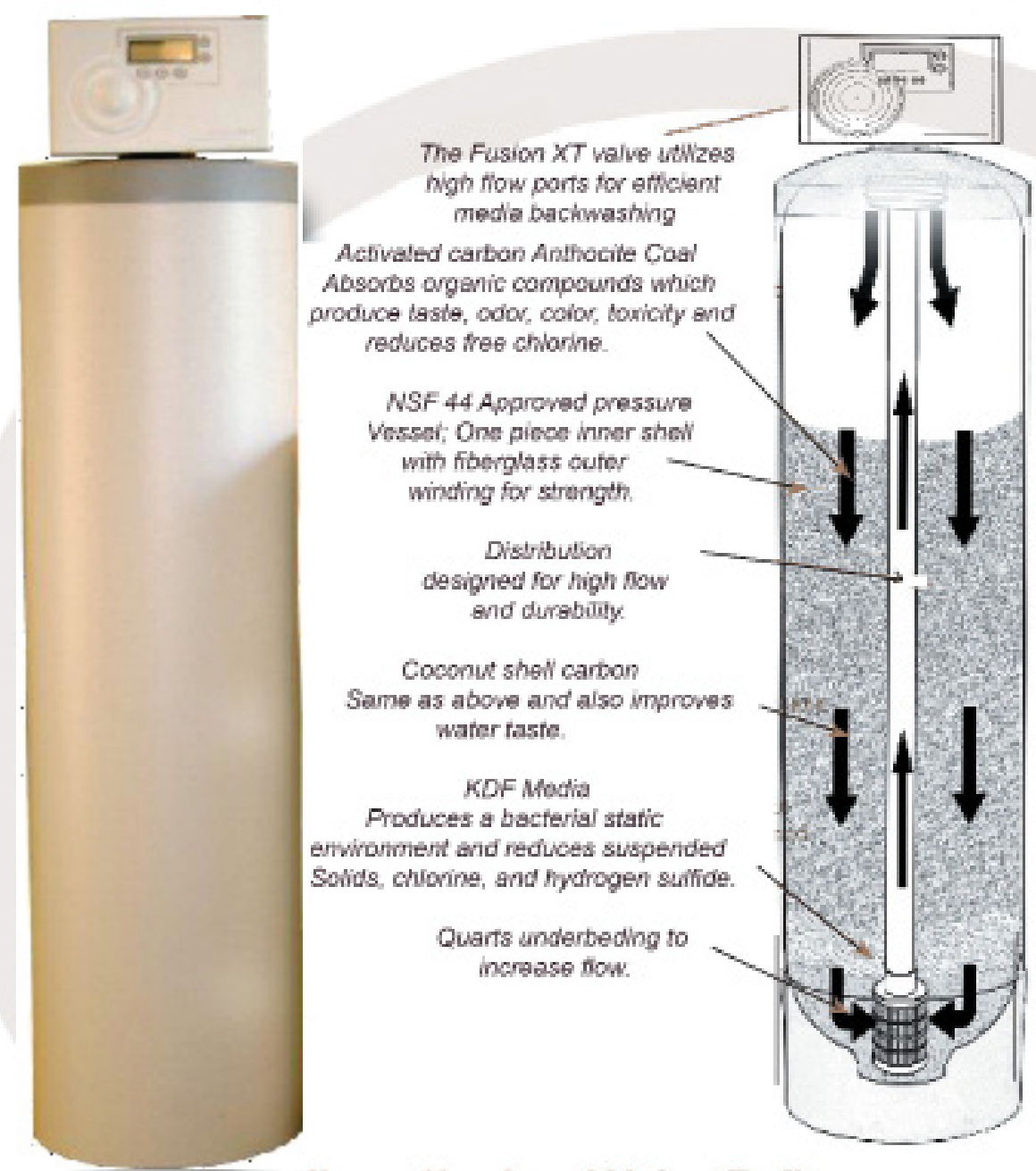
REPLACEMENT PARTS

Yearly maintenance for the WaterMaker Five is quick and easy. All cartridges are designed to be changed without tools. When properly maintained, the WaterMaker Five system will provide you with years of trouble-free service. The cartridges in this system must be replaced on a regular basis to maintain efficiency and to ensure high water quality.

Test your water every 6 months using a digital TDS meter. Consider membrane replacement when the TDS rejection falls below 85%.

SINGLE CARTRIDGE	Model WME-50		Replacement Interval	Part Number
	Stage 1	Prefilter		
	Stage 2	Prefilter		
	Stage 3	RO Membrane		
	Stage 4	Postfilter		
	Stage 5	Post-tank filter	6-12 months	104883
	Chrome Faucet		As needed	108242
	Brushed Nickel Faucet			107197
	2-Gallon Storage Tank			104940
	Digital TDS Meter			100877





The alternative to a Water Softener

Multi-Stage Whole House Filtration

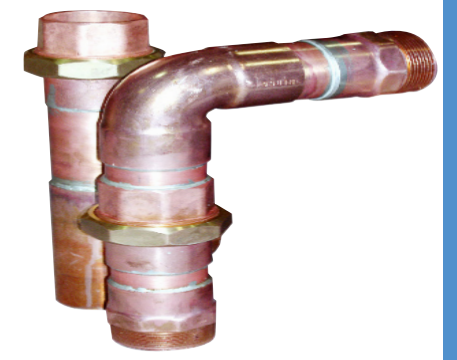
This system does not soften water.

Don't Waste Your Money!

"Stop wasting money cleaning up your tap water! Hard water requires up to 75% more soap to clean up...Between \$0.17 and \$0.21 of every dollar at the supermarket is spent on cleaning products.

-Water Quality Association (WQA)

Detergents are just chemical water softener.



Benefits In Your Plumbing

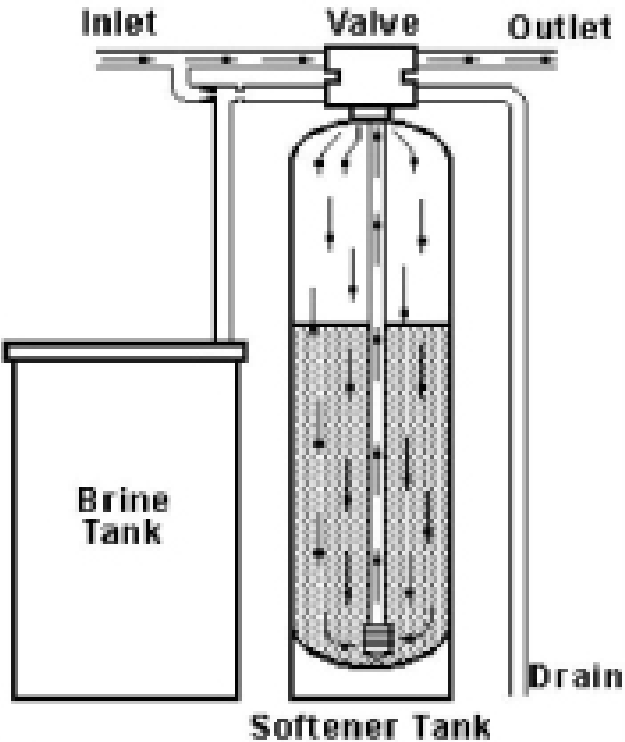
- Laundry Machine: eliminates hard-water issues—extending appliance life by 75% according to a study by the American Water Works Association (AWWA)
- Laundry: 50% to 75% less detergent
- Clothes: cleaner, brighter; Extends clothing life by 15%; no skin-irritating chemicals left over in fabrics.
- Flow Rates: flow rates remain at peak flow; no clogging
- No Scale: maintain high efficiency of water heaters, dishwasher and laundry diaphragms do not corrode, toilets and sinks do not experience "hardness-block"



Squeaky clean is not clean...it is to the point when the natural skin oils have been removed and replaced with the minerals in the water.

The Restriction and Reduction of Flow Rate and Pressure Loss is the Reason Most Water Softeners “Do Not Meet Plumbing Code”

- The First and Foremost Plumbing Code Requirement is “Certification”
- All Water Softeners Must Be NSF 44 Certified.
Reference: IPC. 105.32 303.4 611.4
- Chapter 6 Requires All Equipment to Meet the Flow Rate and Pressure Loss Demand for the Application.
- Without Certification it is “NOT POSSIBLE” to determine if the equipment has the proper engineered sizing to meet the requirements of the intended application.



Quick Reference Guide for Fixture Unit Count And Water Softener Sizing.
Fixtures and Load Values Assigned in Fixture Tables E103.3

Table 1	
Bathroom Group	3.6
Kitchen Sink	1.4
Dishwashing Machine	1.4
Washing Machine	1.4
Shower	1.4
Lavatory	0.7
Water Closet	2.2
Bathtub	1.4

Table 2				
Size	Fixture Units	Flow Rate (GPM)	Meter	Main Water Line
1 Bath	7.8	12.8	3/4"	3/4"
2 Bath	11.4	15.4	3/4"	1"
2 1/2 Bath	14.3	17.0	3/4"	1"
3 Bath	15.0	17.5	1"	1"
3 1/2 Bath	17.3	18.4	1"	1"
4 Bath	18.6	19.0	1"	1"
4 1/2 Bath	20.9	19.7	1"	1"
5 Bath	22.2	21.5	1"	1"

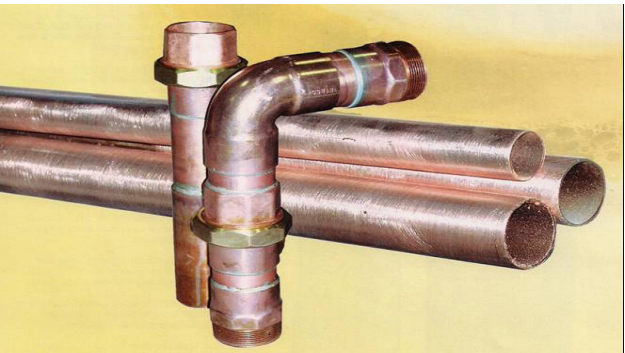
This example is intended for quick reference only, refer to actual code for verification

Chart is Based on International Plumbing Code 2000-2012.
Reference: Table (E103.3)
Example provided by: National Home Builders Association
Reference: Plumbing Code Requirements and Sizing Guide for Residential Water Softeners, Second Edition.

Table 2 was created by NG Sales (Terry Martin), as an aid and quick reference guide to common fixture counts, however actual fixture counts may vary with addition or subtraction of fixtures.
Criteria used for creating Chart:
Water Line sizing was done with 50 to 60 PSI with a developed length of 40 to 50 feet
Single Laundry
Single Kitchen sink with dish-washer
3 fixtures per Bath
Hose bibs not used in fixture water load.

Fusion XT
Engineered Water Softeners

Size your Softeners By the size of the main water line



3/4" Pipe 48,000
1" Pipe 70,000
1.25" Pipe 90,000

48,000 Grain	
Water Pressure	Flow Rate
35 psi	14.3
45 psi	15.2
55 psi	16.4
65 psi	17.6
70,000 Grain	
35 Psi	15.9
45 psi	17.1
55 psi	19.4
65 psi	21.5
90,000 Grain	
35 psi	20.2
45 psi	24.4
55 psi	28.7
65 psi	32.4

