NORTH STAR™
WATER TREATMENT SYSTEMS

COMMERCIAL WATER TREATMENT **GUIDE**

PROBLEM WATER SHOULDN'T **HURT YOUR BUSINESS**

When you run a business that uses water, it's important to have the hard facts: contaminants, minerals, metals, acidic or alkaline water costs industry millions of dollars annually in additional maintenance and equipment replacement. Over time, untreated water can build up in pipes and equipment, restrict water flow, and clog valves and vents. In addition, particles in the water can cause excessive wear on valve seals, which leads to dripping faucets and fixture staining. No matter what kind of business you are running, quality water in indispensable for your operations and bottom line.

OUR SOFTENING & FILTRATION SYSTEMS ARE PERFECT FOR:

Hospitals

Hotels

Restaurants

&

OTHER COMMERCIAL AND INDUSTRIAL APPLICATIONS

TREATING YOUR WATER IS A **SMART BUSINESS SOLUTION**

REDUCE PLUMBING REPAIRS

Eliminate sediment, hard water and particulate matter from your plumbing system that causes flow restrictions and pipe damage.

REDUCE FIXTURE WEAR

Prevent damage-causing buildup on faucets, sinks and tubs. Eliminate additional scrubbing that can cause premature wear.

PROLONG APPLIANCE LIFE

Commercial warewashers and other machines last longer without harmful scale buildup that can damage parts and restrict operation.

PROLONG LINEN & TEXTILE LIFE

Prolong the life of commercial linens and textiles without the staining caused by iron and problem water.

MAKE CLEANING EASIER

Spend less time cleaning without the scale, stains and scum associated with problem water.

PROVIDE A BETTER CUSTOMER EXPERIENCE

Customers can enjoy better tasting beverages, softer skin & hair, and a more hospitable experience.

ECONOMICAL, HEAVY-DUTY **COMMERCIAL SOFTENING SYSTEMS**

COUNTERCURRENT FLOW

During the regeneration process, the resin bed is cleaned in the opposite direction of the service flow, lifting the hardness minerals up and out of the tank while minimizing salt and water use.

ADJUSTABLE BACKWASH

Features high flow backwash hardware to ensure proper bed cleaning. Customizable backwash duration based on an initial water analysis.

INDUSTRIAL GRADE VALVE

Our valves have fewer than 25 moving parts, so they require less service than competitive valves.

HEAVY-DUTY TANKS

Durable, high-pressure resin tanks and rugged, long-lasting salt storage tanks withstand impact and environmental abuse.

HIGH PERFORMANCE SOFTENING MEDIA

North Star uses only FDA-approved long-lasting softening resin in every commercial softener to condition your water more effectively.

WARRANTY PROTECTION

Resin tanks/Salt Tanks - 10 years | Electronics - 3 years | Parts - 1 year

ADDITIONAL FEATURES THAT MAKE OUR COMMERCIAL SOFTENER SERIES **BEST-IN-CLASS**

1. Snap Clamp Rings for Ease of Connecting
2. Top Distributor Basket
3. Brine Make-Up Flow Control
4. Removable Aspirator
5. Up to 2" NPT Union Connections
6. Adjustable Backwash Flow Control
7. Up to 2" Ported Flow Passage in Plastic Valve Housing
8. High Torque 24 V-DC Motor
9. Valve Tank Adaptor Allows Easy Access into Tank with Clamp Ring Connector
10. High-Strength, Corrosion Resistant Piston

COMMERCIAL SOFTENING

HEAVY DUTY WATER SOFTENERS WITH 1″ VALVE

SPECIFICATIONS

Model Number		PA071	PA101	PA131	PA191	PA251	PA321
Grains Capacity[2] At Salt Dosage[1]	4 lbs./cu. ft.	37,000 Grains	54,000 Grains	72,000 Grains	108,000 Grains	144,000 Grains	180,000 Grains
	6 lbs./cu. ft.	50,000 Grains	72,000 Grains	96,000 Grains	144,000 Grains	192,000 Grains	240,000 Grains
	8 lbs./cu. ft.	61,000 Grains	84,000 Grains	112,000 Grains	168,000 Grains	224,000 Grains	280,000 Grains
	10 lbs./cu. ft.	67,000 Grains	93,000 Grains	124,000 Grains	186,000 Grains	248,000 Grains	310,000 Grains
	12 lbs./cu. ft.	71,000 Grains	99,000 Grains	132,000 Grains	198,000 Grains	264,000 Grains	330,000 Grains
Resin Tank Size (in.)		12″ x 54″	17″ x 58″	17″ x 58″	24″ x 72″	24″ x 72″	24″ x 72″
Resin Quantity (cu. ft.)		2	3	4	6	8	10
Connecting Pipe Size		1″ NPT	1″ NPT	1″ NPT	1″ NPT	1″ NPT	1″ NPT
Drain Line Connection Size (in.)		5/8″ I.D. Hose	5/8″ I.D. Hose	5/8″ I.D. Hose	5/8″ I.D. Hose	5/8″ I.D. Hose	5/8″ I.D. Hose
Salt Tank Size (in.)		17″ x 38.5″	24″ x 50.5″	24″ x 50.5″	31″ x 51″	31″ x 51″	31″ x 51″
Salt Tank Capacity (lbs.)		340	1,000	1,000	1,500	1,500	1,500
Operating Pressure		30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi
Operating Temperature		35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F
Max. Drain Flow (gpm)		5	7	7	10	10	10
Recharge Water Used (gal.)		108	166	180	286	293	302
Max. Clear Water Iron[3]		20 ppm	20 ppm	20 ppm	20 ppm	20 ppm	20 ppm
Electrical Rating		24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts

Flow rates and capacities shown are per tank. All systems are available in single, duplex, triplex and quadplex configurations. [1] Salt dosages can be set to maintain desired efficiencies or changed to auto adjusting, salt-efficiency or boiler option. See manual for details. [2] Grains capacity is for counter-current regeneration sizing purposes. The actual capacity could be 5% - 10% greater than shown for each salt dosage. [3] Increased amount of clear water iron (ferrous) can reduce softening efficiency and capacity. Periodic use of resin bed cleaner may be necessary. Iron removal will depend on water conditions (i.e. pH, hardness, content and type of iron).

OPERATIONAL FLOWS

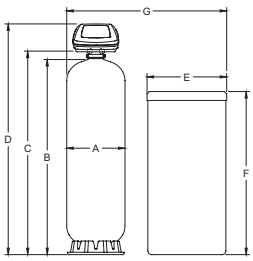
FLOW RATE (GPM) AND PRESSURE (PSI) LOSS (ΔP)

Model Number	5 gpm	10 gpm	15 gpm	20 gpm	25 gpm	30 gpm	35 gpm	40 gpm
PA071	2.6 ΔP	6.6 ΔP	11.8 ΔP	18.3 ΔP	26.0 ΔP	34.8 ΔP	-	-
PA101	1.3 ΔP	3.8 ΔP	7.3 ΔP	11.8 ΔP	17.4 ΔP	24.1 ΔP	31.8 ΔP	-
PA131	1.4 ΔP	4.0 ΔP	7.8 ΔP	12.7 ΔP	18.6 ΔP	25.7 ΔP	33.7 ΔP	-
PA191	1.2 ΔP	3.1 ΔP	6.3 ΔP	10.5 ΔP	16.3 ΔP	21.9 ΔP	29.1 ΔP	37.3 ΔP
PA251	1.2 ΔP	3.3 ΔP	6.6 ΔP	10.9 ΔP	16.8 ΔP	22.6 ΔP	30.0 ΔP	38.4 ΔP
PA321	1.2 ΔP	3.5 ΔP	6.9 ΔP	11.3 ΔP	17.3 ΔP	23.3 ΔP	30.9 ΔP	39.5 ΔP

Key

- System design flow rates
- For intermittent use only
- Not for use at these flow rates

All specifications listed are for SINGLE unit operation.



DIMENSIONS

Model Number	A (Resin Tank Diameter)	B (Resin Tank Height)	C (Inlet - Outlet Height)	D (Overall Height)	E (Brine Tank Diameter)	F (Resin Tank Height)	G (Simplex)
PA071	12″	54″	58″	63.75″	17″	38.5″	36″
PA101, PA131	17″	58″	62.5″	68.25″	24″	50.5″	48″
PA191, PA251, PA321	24″	72″	79.8″	85.5″	31″	51″	61″

Duplex = 1 Brine Tank | Triplex = 2 Brine Tanks | Quadplex = 2 Brine Tanks

HEAVY DUTY WATER SOFTENERS WITH 1-½" VALVE

SPECIFICATIONS

Model Number		PA1015	PA1315	PA1615	PA1915	PA2515	PA3215	PA3615	PA4515
Grains Capacity[2] At Salt Dosage[1]	4 lbs./cu. ft.	54,000 Grains	72,000 Grains	90,000 Grains	108,000 Grains	144,000 Grains	180,000 Grains	216,000 Grains	270,000 Grains
	6 lbs./cu. ft.	72,000 Grains	96,000 Grains	120,000 Grains	144,000 Grains	192,000 Grains	240,000 Grains	288,000 Grains	360,000 Grains
	8 lbs./cu. ft.	84,000 Grains	112,000 Grains	140,000 Grains	168,000 Grains	224,000 Grains	280,000 Grains	336,000 Grains	420,000 Grains
	10 lbs./cu. ft.	93,000 Grains	124,000 Grains	155,000 Grains	186,000 Grains	248,000 Grains	310,000 Grains	372,000 Grains	465,000 Grains
	12 lbs./cu. ft.	99,000 Grains	132,000 Grains	165,000 Grains	198,000 Grains	264,000 Grains	330,000 Grains	396,000 Grains	495,000 Grains
Resin Tank Size (in.)		17" x 58"	17" x 58"	17" x 72"	24" x 72"	24" x 72"	24" x 72"	30" x 72"	30" x 72"
Resin Quantity (cu. ft.)		3	4	5	6	8	10	12	15
Connecting Pipe Size		1-½" NPT	1-½" NPT	1-½" NPT	1-½" NPT	1-½" NPT	1-½" NPT	1-½" NPT	1-½" NPT
Drain Line Connection Size (in.)		1-½" NPT	1-½" NPT	1-½" NPT	1-½" NPT	1-½" NPT	1-½" NPT	1-½" NPT	1-½" NPT
Salt Tank Size (in.)		24" x 50"	24" x 50"	24" x 50"	31" x 51"	31" x 51"	31" x 51"	41" x 51"	41" x 51"
Salt Tank Capacity (lbs.)		1,000	1,000	1,000	1,500	1,500	1,500	2,500	2,500
Operating Pressure		30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi
Operating Temperature		35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F
Max. Drain Flow (gpm)		7	7	7	12	12	12	24	24
Recharge Water Used (gal.)		151	166	181	271	302	332	543	588
Max. Clear Water Iron[3]		20 ppm	20 ppm	20 ppm	20 ppm	20 ppm	20 ppm	20 ppm	20 ppm
Electrical Rating		24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts

Flow rates and capacities shown are per tank. All systems are available in single, duplex, triplex and quadplex configurations. [1] Salt dosages can be set to maintain desired efficiencies or changed to auto adjusting, salt-efficiency or boiler option. See manual for details. [2] Grains capacity is for counter-current regeneration sizing purposes. The actual capacity could be 5% - 10% greater than shown for each salt dosage. [3] Increased amount of clear water iron (ferrous) can reduce softening efficiency and capacity. Periodic use of resin bed cleaner may be necessary. Iron removal will depend on water conditions (i.e. pH, hardness, content and type of iron).

OPERATIONAL FLOWS

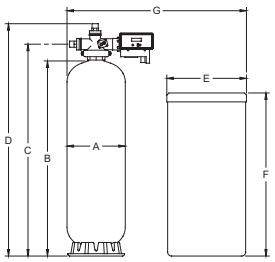
FLOW RATE (GPM) AND PRESSURE (PSI) LOSS (ΔP)

Model Number	10 gpm	20 gpm	30 gpm	40 gpm	50 gpm	60 gpm	70 gpm
PA1015	1.5 ΔP	3.5 ΔP	7 ΔP	10.5 ΔP	16 ΔP	20.4 ΔP	-
PA1315	2 ΔP	4.5 ΔP	8.5 ΔP	12.5 ΔP	18 ΔP	19 ΔP	33.9 ΔP
PA1615	2.5 ΔP	5 ΔP	10 ΔP	14.5 ΔP	21.4 ΔP	26.9 ΔP	37.9 ΔP
PA1915	1 ΔP	2 ΔP	4 ΔP	8 ΔP	12.4 ΔP	15.9 ΔP	23.9 ΔP
PA2515	1 ΔP	2.5 ΔP	5.5 ΔP	8.5 ΔP	12.9 ΔP	16.4 ΔP	24.9 ΔP
PA3215	1 ΔP	3 ΔP	6 ΔP	9 ΔP	13.9 ΔP	17.9 ΔP	26.9 ΔP
PA3615	-	2 ΔP	4.5 ΔP	7 ΔP	10.9 ΔP	13.9 ΔP	21.9 ΔP
PA4515	-	2.5 ΔP	5 ΔP	6.5 ΔP	10.5 ΔP	14.9 ΔP	20.9 ΔP

Key

- System design flow rates
- For intermittent use only
- Not for use at these flow rates

All specifications listed are for SINGLE unit operation.



DIMENSIONS

Model Number	A (Resin Tank Diameter)	B (Resin Tank Height)	C (Inlet - Outlet Height)	D (Overall Height)	E (Brine Tank Diameter)	F (Resin Tank Height)	G (Simplex)
PA1015, PA1315	17"	58"	64"	70.5"	24"	50"	44"
PA1615	17"	72"	77"	83.5"	24"	50"	44"
PA1915, PA2515, PA3215	24"	72"	77"	83.5"	31"	51"	59"
PA3615, PA4515	30"	72"	81"	87.5"	41"	51"	75"

Duplex = 1 Brine Tank | Triplex = 2 Brine Tanks | Quadplex = 2 Brine Tanks

HEAVY DUTY WATER SOFTENERS WITH 2" VALVE

SPECIFICATIONS

Model Number		PA102	PA132	PA162	PA192	PA252	PA322	PA362	PA452	PA602
Grains Capacity[2] At Salt Dosage[1]	4 lbs./cu. ft.	54,000 Grains	72,000 Grains	90,000 Grains	108,000 Grains	144,000 Grains	180,000 Grains	216,000 Grains	270,000 Grains	360,000 Grains
	6 lbs./cu. ft.	72,000 Grains	96,000 Grains	120,000 Grains	144,000 Grains	192,000 Grains	240,000 Grains	288,000 Grains	360,000 Grains	480,000 Grains
	8 lbs./cu. ft.	84,000 Grains	112,000 Grains	140,000 Grains	168,000 Grains	224,000 Grains	280,000 Grains	336,000 Grains	420,000 Grains	560,000 Grains
	10 lbs./cu. ft.	93,000 Grains	124,000 Grains	155,000 Grains	186,000 Grains	248,000 Grains	310,000 Grains	372,000 Grains	465,000 Grains	620,000 Grains
	12 lbs./cu. ft.	99,000 Grains	132,000 Grains	165,000 Grains	198,000 Grains	264,000 Grains	330,000 Grains	396,000 Grains	495,000 Grains	660,000 Grains
Resin Tank Size (in.)		17" x 58"	17" x 58"	17" x 72"	24" x 72"	24" x 72"	24" x 72"	30" x 72"	30" x 72"	36" x 72"
Resin Quantity (cu. ft.)		3	4	5	6	8	10	12	15	20
Connecting Pipe Size		2" NPT	2" NPT	2" NPT	2" NPT	2" NPT	2" NPT	2" NPT	2" NPT	2" NPT
Drain Line Connection Size (in.)		2" NPT	2" NPT	2" NPT	2" NPT	2" NPT	2" NPT	2" NPT	2" NPT	2" NPT
Salt Tank Size (in.)		24" x 50"	24" x 50"	24" x 50"	31" x 51"	31" x 51"	31" x 51"	41" x 51"	41" x 51"	41" x 51"
Salt Tank Capacity (lbs.)		1,000	1,000	1,000	1,500	1,500	1,500	2,500	2,500	2,500
Operating Pressure		30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi	30 - 125 psi
Operating Temperature		35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F	35 - 100°F
Max. Drain Flow (gpm)		7	7	7	12	12	12	24	24	32
Recharge Water Used (gal.)		151	166	181	271	302	332	543	588	784
Max. Clear Water Iron[3]		20 ppm	20 ppm	20 ppm	20 ppm	20 ppm	20 ppm	20 ppm	20 ppm	20 ppm
Electrical Rating		24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts	24 VDC - 65 Watts

Flow rates and capacities shown are per tank. All systems are available in single, duplex, triplex and quadplex configurations. [1] Salt dosages can be set to maintain desired efficiencies or changed to auto adjusting, salt-efficiency or boiler option. See manual for details. [2] Grains capacity is for counter-current regeneration sizing purposes. The actual capacity could be 5% - 10% greater than shown for each salt dosage. [3] Increased amount of clear water iron (ferrous) can reduce softening efficiency and capacity. Periodic use of resin bed cleaner may be necessary. Iron removal will depend on water conditions (i.e. pH, hardness, content and type of iron).

OPERATIONAL FLOWS

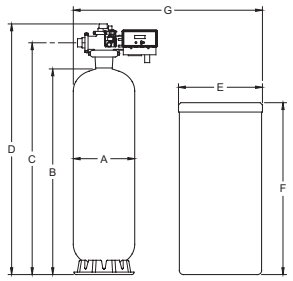
FLOW RATE (GPM) AND PRESSURE (PSI) LOSS (ΔP)

Model Number	10 gpm	20 gpm	30 gpm	40 gpm	50 gpm	60 gpm	70 gpm	80 gpm	90 gpm	100 gpm	110 gpm	120 gpm
PA102	1.5 ΔP	3.5 ΔP	6 ΔP	9 ΔP	12.5 ΔP	16.5 ΔP	-	-	-	-	-	-
PA132	2 ΔP	4.5 ΔP	7.5 ΔP	11 ΔP	15.5 ΔP	20 ΔP	25 ΔP	-	-	-	-	-
PA162	2.5 ΔP	5 ΔP	9 ΔP	13 ΔP	18 ΔP	23 ΔP	29 ΔP	35 ΔP	-	-	-	-
PA192	1 ΔP	2 ΔP	4 ΔP	6.5 ΔP	9 ΔP	12 ΔP	15 ΔP	19 ΔP	23 ΔP	-	-	-
PA252	1 ΔP	2.5 ΔP	4.5 ΔP	7 ΔP	9.5 ΔP	12.5 ΔP	16 ΔP	20 ΔP	24 ΔP	28 ΔP	-	-
PA322	1 ΔP	3 ΔP	5 ΔP	7.5 ΔP	10.5 ΔP	14 ΔP	18 ΔP	22 ΔP	26 ΔP	31 ΔP	-	-
PA362	-	2 ΔP	3.5 ΔP	5.5 ΔP	7.5 ΔP	10 ΔP	13 ΔP	16 ΔP	20 ΔP	23 ΔP	27 ΔP	31 ΔP
PA452	-	2.5 ΔP	4 ΔP	6 ΔP	8 ΔP	11 ΔP	14 ΔP	17 ΔP	21 ΔP	25 ΔP	29 ΔP	33 ΔP
PA602	-	-	3 ΔP	5 ΔP	7 ΔP	9 ΔP	12 ΔP	15 ΔP	18 ΔP	21 ΔP	25 ΔP	29 ΔP

Key

- System design flow rates
- For intermittent use only
- Not for use at these flow rates

All specifications listed are for SINGLE unit operation.



DIMENSIONS

Model Number	A (Resin Tank Diameter)	B (Resin Tank Height)	C (Inlet - Outlet Height)	D (Overall Height)	E (Brine Tank Diameter)	F (Resin Tank Height)	G (Simplex)
PA102, PA132	17"	58"	64"	70.5"	24"	50"	44"
PA162	17"	72"	77"	83.5"	24"	50"	44"
PA192, PA252, PA322	24"	72"	77"	83.5"	31"	51"	59"
PA362, PA452	30"	72"	81"	87.5"	41"	51"	75"
PA602	36"	72"	88.5"	94"	41"	51"	80"

Duplex = 1 Brine Tank | Triplex = 2 Brine Tanks | Quadplex = 2 Brine Tanks

EFFECTIVE & EFFICIENT **COMMERCIAL WATER FILTRATION SYSTEMS**

ACTIVATED CARBON FILTERS

Offer an effective method to remove chlorine, taste & odor and other organic substances in a water supply. Small amounts of color and low levels of hydrogen sulfide may also be removed. In some difficult water conditions, it may be necessary to use a different grade of carbon to treat the water.

CATALYTIC CARBON FILTERS

Compared to traditional activated carbon. Reduces chloramines from municipal water supplies as well as offer superior capacity for chlorine, taste & odor removal.

MULTI-MEDIA FILTERS

Provides an efficient means to remove sediment and particulate matter from a water supply. Multi-media filters use stratified layers of graduated-size media, which offer a depth filtration process through the filter. Larger particles are filtered out at the top of the media, and the bottom layers filter out particles down to 10 microns.

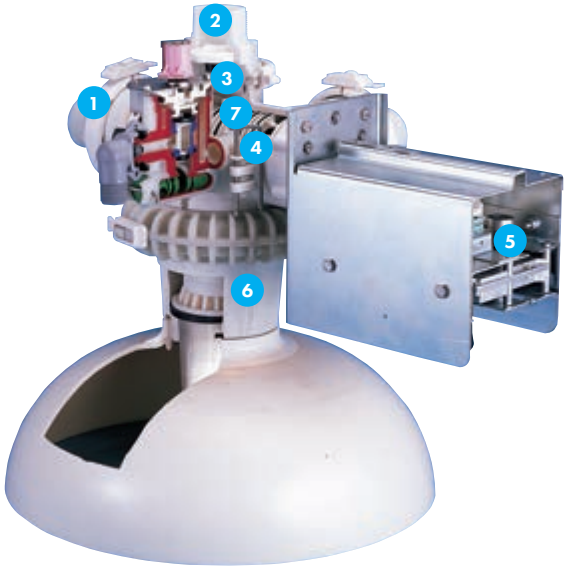
GREENSAND PLUS FILTERS

These filters employ a manganese-coated greensand as the main medium in the filter. Additional media are used to provide a depth filtration process, similar to the multi-media filter. The feed water must be treated to provide a continuous oxidation of iron, manganese and hydrogen sulfide for effective operation. This requires a chemical feed pump to inject potassium permanganate into the supply water.

WARRANTY PROTECTION

Resin tanks - 10 years | Electronics - 3 years | Parts - 1 year

ADDITIONAL FEATURES THAT MAKE OUR COMMERCIAL FILTRATION SERIES **BEST-IN-CLASS**



1. Snap Clamp Rings for Ease of Connecting
2. Up to 2″ NPT Union Connections
3. Adjustable Backwash Flow Control
4. Up to 2″ Ported Flow Passage in Non-corrosive Valve Housing
5. High Torque 24 VDC Motor
6. Valve Tank Adaptor Allows Easy Access into Tank with Clamp Ring Connector
7. High-Strength, Corrosion Resistant Piston

COMMERCIAL FILTRATION

HEAVY DUTY WATER FILTERS WITH 1" VALVE

SPECIFICATIONS

FILTERS (NO MEDIA)

Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz	2 Filter Aggregate or Neutralite		
PA121XS	4 gpm	8 gpm	12.3" x 55"	1"	7 gpm	17#/.17 cu. ft.	2 cu. ft.		
PA171XS	8 gpm	18 gpm	17.6" x 59.5"	1"	15 gpm	100#/1 cu. ft.	4 cu. ft.		

CARBON FILTERS

Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz	2 Carbon Media		
PA121CS	4 gpm	8 gpm	12.3" x 55"	1"	7 gpm	17#/.17 cu. ft.	56#/2 cu. ft.		
PA171CS	8 gpm	18 gpm	17.6" x 59.5"	1"	15 gpm	100#/1 cu. ft.	112#/4 cu. ft.		

MULTI-MEDIA FILTERS

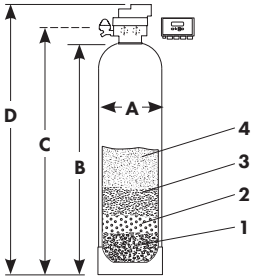
Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz	2 Garnet Media	3 Filter Sand Media	4 Anthracite Media
PA121MS	4 gpm	8 gpm	12.3" x 55"	1"	10 gpm	34#/.34 cu. ft.	25#/.19 cu. ft.	50#/.5 cu. ft.	52#/1 cu. ft.

GREENSAND PLUS FILTERS

Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz	2 Garnet Media	3 Greensand Plus	4 Anthracite Media
PA121GS	4 gpm	8 gpm	12.3" x 55"	1"	10 gpm	17#/.17 cu. ft.	25#/.19 cu. ft.	128#/1.5 cu. ft.	26#/.5 cu. ft.

DIMENSIONS

Model Type	A	B	C	D
PA121s	12.3"	55"	57"	65.75"
PA171s	17.6"	59.5"	61.5"	70.25"



Flow rates and capacities shown are per tank. All systems are available in single, duplex, triplex and quadplex configurations.
The filters are operated on a demand basis utilizing the turbine meter and control with an override option to initiate a backwash on a more frequent basis.
The filters will operate very effectively at the optimum flow rates and should be operated at the peak flow for only short periods of time.
Duplex = 2 Mineral Tanks | Triplex = 3 Mineral Tanks | Quadplex = 4 Mineral Tanks

HEAVY DUTY WATER FILTERS WITH 1-½" VALVE

SPECIFICATIONS

FILTERS (NO MEDIA)

Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz			
PA1715XS	Media Dependent	Media Dependent	17" x 58"	1-½"	Media Dependent	100#/1 cu. ft.			
PA2415XS	Media Dependent	Media Dependent	24" x 72"	1-½"	Media Dependent	150#/1.5 cu. ft.			

CARBON FILTERS

Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz	2 Carbon Media		
PA1715CS	8 gpm	16 gpm	17" x 58"	1-½"	15 gpm	100#/1 cu. ft.	112#/4 cu. ft.		
PA2415CS	15 gpm	30 gpm	24" x 72"	1-½"	30 gpm	150#/1.5 cu. ft.	280#/10 cu. ft.		
PA3015CS	25 gpm	50 gpm	30" x 72"	1-½"	50 gpm	250#/2.5 cu. ft.	420#/15 cu. ft.		

MULTI-MEDIA FILTERS

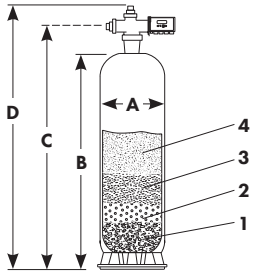
Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz	2 Garnet Media	3 Filter Sand Media	4 Anthracite Media
PA1715MS	15 gpm	30 gpm	17" x 58"	1-½"	25 gpm	100#/1 cu. ft.	50#/1 cu. ft.	100#/1 cu. ft.	156#/3 cu. ft.
PA2415MS	30 gpm	60 gpm	24" x 72"	1-½"	50 gpm	150#/1.5 cu. ft.	150#/1.2 cu. ft.	250#/2.5 cu. ft.	312#/6 cu. ft.

GREENSAND PLUS FILTERS

Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz	2 Garnet Media	3 Greensand Plus	4 Anthracite Media
PA1715GS	8 gpm	13 gpm	17" x 58"	1-½"	25 gpm	100#/1 cu. ft.	50#/.4 cu. ft.	255#/3 cu. ft.	78#/1.5 cu. ft.
PA2415GS	30 gpm	60 gpm	24" x 72"	1-½"	50 gpm	150#/1.5 cu. ft.	150#/1.5 cu. ft.	510#/6 cu. ft.	156#/3 cu. ft.

DIMENSIONS

Model Type	A	B	C	D
PA1715s	17"	58"	64"	70.5"
PA2415s	24"	72"	77"	83.5"
PA3015s	30"	72"	81"	87.5"



Flow rates and capacities shown are per tank. All systems are available in single, duplex, triplex and quadplex configurations.
The filters are operated on a demand basis utilizing the turbine meter and control with an override option to initiate a backwash on a more frequent basis.
The filters will operate very effectively at the optimum flow rates and should be operated at the peak flow for only short periods of time.
Duplex = 2 Mineral Tanks | Triplex = 3 Mineral Tanks | Quadplex = 4 Mineral Tanks

HEAVY DUTY WATER FILTERS WITH 2" VALVE

SPECIFICATIONS

FILTERS (NO MEDIA)

Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz			
PA172XS	Media Dependent	Media Dependent	17" x 58"	2"	Media Dependent	100#/1 cu. ft.			
PA242XS	Media Dependent	Media Dependent	24" x 72"	2"	Media Dependent	150#/1 cu. ft.			

CARBON FILTERS

Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz	2 Carbon Media		
PA172CS	8 gpm	16 gpm	17" x 58"	2"	15 gpm	100#/1 cu. ft.	112#/4 cu. ft.		
PA242CS	15 gpm	30 gpm	24" x 72"	2"	30 gpm	150#/1.5 cu. ft.	280#/10 cu. ft.		
PA302CS	25 gpm	50 gpm	30" x 72"	2"	50 gpm	250#/2.5 cu. ft	420#/15 cu. ft.		
PA362CS	35 gpm	70 gpm	36" x 72"	2"	70 gpm	300#/3 cu. ft.	560#/20 cu. ft.		

MULTI-MEDIA FILTERS

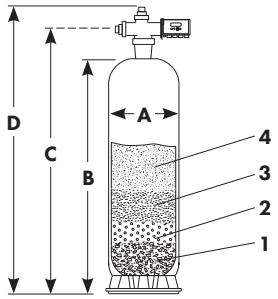
Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz	2 Garnet Media	3 Filter Sand Media	4 Anthracite Media
PA172MS	15 gpm	30 gpm	17" x 58"	2"	25 gpm	100#/1 cu. ft.	50#/.4 cu. ft.	100#/1 cu. ft.	156#/3 cu. ft.
PA242MS	30 gpm	60 gpm	24" x 72"	2"	50 gpm	150#/1.5 cu. ft.	150#/1.2 cu. ft.	250#/2.5 cu. ft.	312#/6 cu. ft.
PA302MS	50 gpm	100 gpm	30" x 72"	2"	70 gpm	250#/2.5 cu. ft.	200#/1.6 cu. ft.	350#/3.5 cu. ft.	520#/10 cu. ft.

GREENSAND PLUS FILTERS

Model Number	Optimum Flow Rate	Peak Flow Rate	Tank Size	Pipe Size	Backwash Flow Rate	1 Washed Quartz	2 Garnet Media	3 Greensand Plus	4 Anthracite Media
PA172GS	8 gpm	13 gpm	17" x 58"	2"	25 gpm	100#/1 cu. ft.	50#/.4 cu. ft.	255#/3 cu. ft.	78#/1.5 cu. ft.
PA242GS	15 gpm	24 gpm	24" x 72"	2"	50 gpm	150#/1.5 cu. ft.	150#/1.2 cu. ft.	510#/6 cu. ft.	156#/3 cu. ft.
PA302GS	25 gpm	38 gpm	30" x 72"	2"	70 gpm	250#/2.5 cu. ft.	200#/1.6 cu. ft.	765#/9 cu. ft.	260#/5 cu. ft.

DIMENSIONS

Model Type	A	B	C	D
PA172s	17"	58"	67"	72.5"
PA242s	24"	72"	81"	86.5"
PA302s	30"	72"	88"	93.5"
PA362s	36"	72"	88.5"	94"



Flow rates and capacities shown are per tank. All systems are available in single, duplex, triplex and quadplex configurations.
The filters are operated on a demand basis utilizing the turbine meter and control with an override option to initiate a backwash on a more frequent basis.
The filters will operate very effectively at the optimum flow rates and should be operated at the peak flow for only short periods of time.
Duplex = 2 Mineral Tanks | Triplex = 3 Mineral Tanks | Quadplex = 4 Mineral Tanks

NORTH STAR **QUALITY**

EASY TO INSTALL

North Star systems come with fittings needed for a simple installation.

LOW MAINTENANCE

We incorporate high-efficiency technology and pro-grade materials into our North Star systems, delivering an easy-to-use solution you can count on.

WARRANTY PROTECTION

North Star Water Treatment Systems boast the most comprehensive warranties in plumbing wholesale, proof of our commitment to quality.

HIGH QUALITY MANUFACTURING

Our U.S. based manufacturing facilities ensure each North Star system exceeds the strictest quality standards. Once our products leave our doors, you can expect a reliable, long-lasting solution.

PRODUCT INNOVATION

Our commitment to research and development provides a constant stream of both products and technology, allowing us to continually push the boundaries within the water treatment industry.

WANT TO **KNOW MORE?**

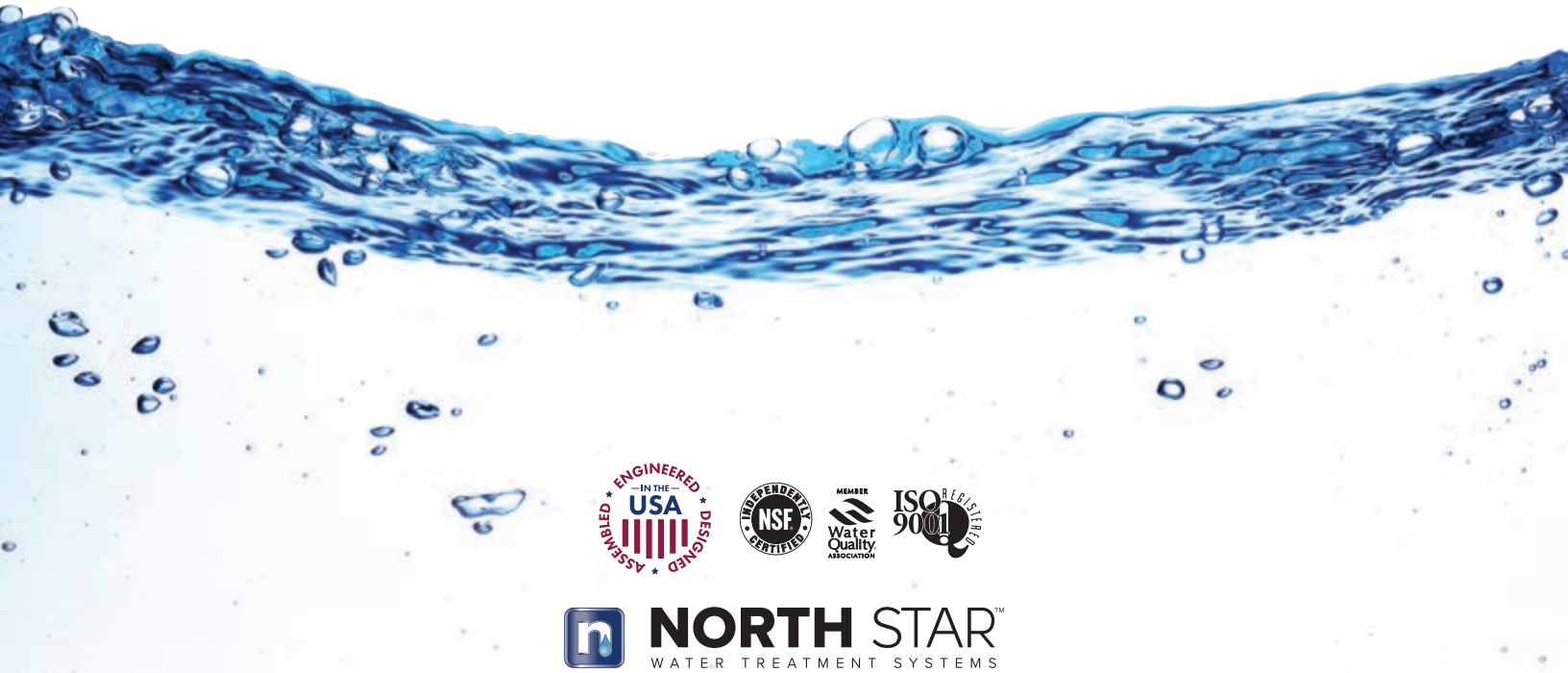
If you need more information about North Star Commercial Water Treatment Systems, contact us or get in touch with your local North Star representative.

Place Business Card Here

HOW TO **CONTACT US**

info@northstarwater.com | www.northstarwater.com

NORTH STAR ALSO OFFERS A COMPREHENSIVE LINE OF
RESIDENTIAL SOFTENING & FILTRATION PRODUCTS



NORTH STAR™
WATER TREATMENT SYSTEMS

®/™ © 2018 North Star Water Treatment Systems | A Marmon Water/Berkshire Hathaway Company | Printed in U.S.A | 7372270 11/18