

Commercial Heavy Duty Water Softening System with High Molecular Weight (HM) Plastic Valve

All systems are available in single, duplex, triplex, and quadplex operation.

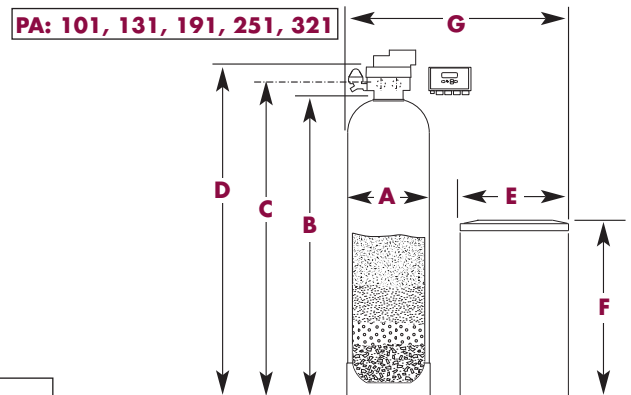
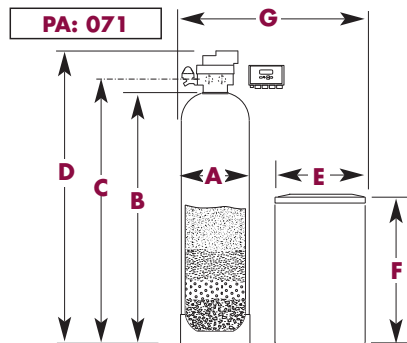
Models: PA071, PA101, PA131, PA191, PA251, and PA321

Features

- Electronic Demand Control Module
- Six-Cycle HM Plastic Valve with Easy-Clamp Ring
- Counter-Current Brining
- Washed Quartz Underbedding
- Automatic Bypass during Regeneration
- Easy Install Bypass Prevention Kits for Multiple Units
- Fiberglass Reinforced Resin Tank
- Water Usage is Metered by Turbine
- 24-Volt Transformer
- Self-Cleaning Upper and Lower Distributors
- High-Density Salt Storage Tank
- Exceptional Flow Rates



Dimensions



Model	A Resin Tank Diameter	B Resin Tank Height	C Inlet- Outlet Height	D Overall Height	E Brine Tank Diameter	F Brine Tank Height	G	
							Single	Twin
PA071	12.3"	55"	58"	63.75"	17"	38.5"	36"	49"
PA101, PA131	17.6"	59.5"	62.5"	68.25"	24"	50.5"	48"	71"
PA191, PA251, PA321	24"	76"	79.8"	85.5"	30"	50.5"	61"	91"

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

Note: Dimensions for duplex, triplex, and quadplex are calculated using the number of brine tanks listed above.

Specifications

All systems are available in single, duplex, triplex, and quadplex operation.

Model		PA071	PA101	PA131	PA191	PA251	PA321
	Salt Dosage*	Grains Capacity**					
Grains Capacity at Salt Dosage	4 lbs./cu. ft.	37,000	54,000	72,000	108,000	144,000	180,000
	6 lbs./cu. ft.	50,000	72,000	96,000	144,000	192,000	240,000
	8 lbs./cu. ft.	61,000	84,000	112,000	168,000	224,000	280,000
	10 lbs./cu. ft.	67,000	93,000	124,000	186,000	248,000	310,000
	12 lbs./cu. ft.	71,000	99,000	132,000	198,000	264,000	330,000
Resin Tank Size (in.)		12.3" x 55"	17.6" x 59.5"	17.6" x 59.5"	24" x 76"	24" x 76"	24" x 76"
Resin Quantity (cu. ft.)		2	3	4	6	8	10
Connecting Pipe Size		1"	1"	1"	1"	1"	1"
Optional Adapters ¹		1.5"	1.5"	1.5"	1.5"	1.5"	1.5"
Salt Tank Capacity (lbs.)		340	1000	1000	1500	1500	1500
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
Operating Ambient Temperature Range		35 – 150°F	35 – 150°F	35 – 150°F	35 – 150°F	35 – 150°F	35 – 150°F
Maximum Drain Flow (gpm)		3	7	7	10	10	10
Recharge Water Use (gal.)		108	166	180	286	293	302
Maximum Clear Water Iron ²		20 ppm	20 ppm	20 ppm	20 ppm	20 ppm	20 ppm
Electrical Rating		24V / 60 Hz	24V / 60 Hz	24V / 60 Hz	24V / 60 Hz	24V / 60 Hz	24V / 60 Hz

*Salt dosages can be set to maintain desired efficiencies or changed to auto adjusting, salt-efficient demand, or boiler operation. See manual for details.

**Grains capacity is for counter-current regeneration sizing purposes. The actual capacity could be 5% – 10% greater than shown for each salt dosage.

¹The optional adapters provide for direct connection of 1.5" copper tube to the 1" service valve.

²Increased amounts of clear water iron (Ferrous) can reduce softening efficiency and capacity. Periodic use of a resin bed cleaner may be necessary. Iron removal will be dependant on water conditions (i.e., pH, hardness, content type of iron, etc.)

Operational Flows*

Model	Flow Rate (GPM) and Pressure (PSI) Loss (ΔP)							
	5 GPM	10 GPM	15 GPM	20 GPM	25 GPM	30 GPM	35 GPM	40 GPM
PA071	2.9 ΔP	7.3 ΔP	13.0 ΔP	20.0 ΔP	28.6 ΔP	–	–	–
PA101	1.4 ΔP	4.2 ΔP	8.0 ΔP	13.0 ΔP	19.1 ΔP	26.5 ΔP	–	–
PA131	1.5 ΔP	4.4 ΔP	8.6 ΔP	14.0 ΔP	20.5 ΔP	28.3 ΔP	–	–
PA191	1.3 ΔP	3.4 ΔP	6.9 ΔP	11.6 ΔP	17.9 ΔP	24.0 ΔP	32.0 ΔP	–
PA251	1.3 ΔP	3.6 ΔP	7.3 ΔP	12.0 ΔP	18.4 ΔP	24.9 ΔP	33.0 ΔP	–
PA321	1.3 ΔP	3.8 ΔP	7.6 ΔP	12.4 ΔP	19.0 ΔP	25.6 ΔP	34.0 ΔP	–

Key:

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

*The above data was obtained from tests run by the University of Minnesota St. Anthony Falls Engineering Lab and is based on a non-fouled filter.

All specifications listed are for SINGLE unit operation.

The North Star Water Conditioning Commercial Heavy Duty Water Softener is subject to a limited warranty that may give you specific rights. A copy of the warranty in the Professional Advantage Series installation manual. Please read the warranty carefully before installing or using a North Star Water Conditioning Water Softener.

North Star
WATER CONDITIONING

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The Science Behind Better Water®

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