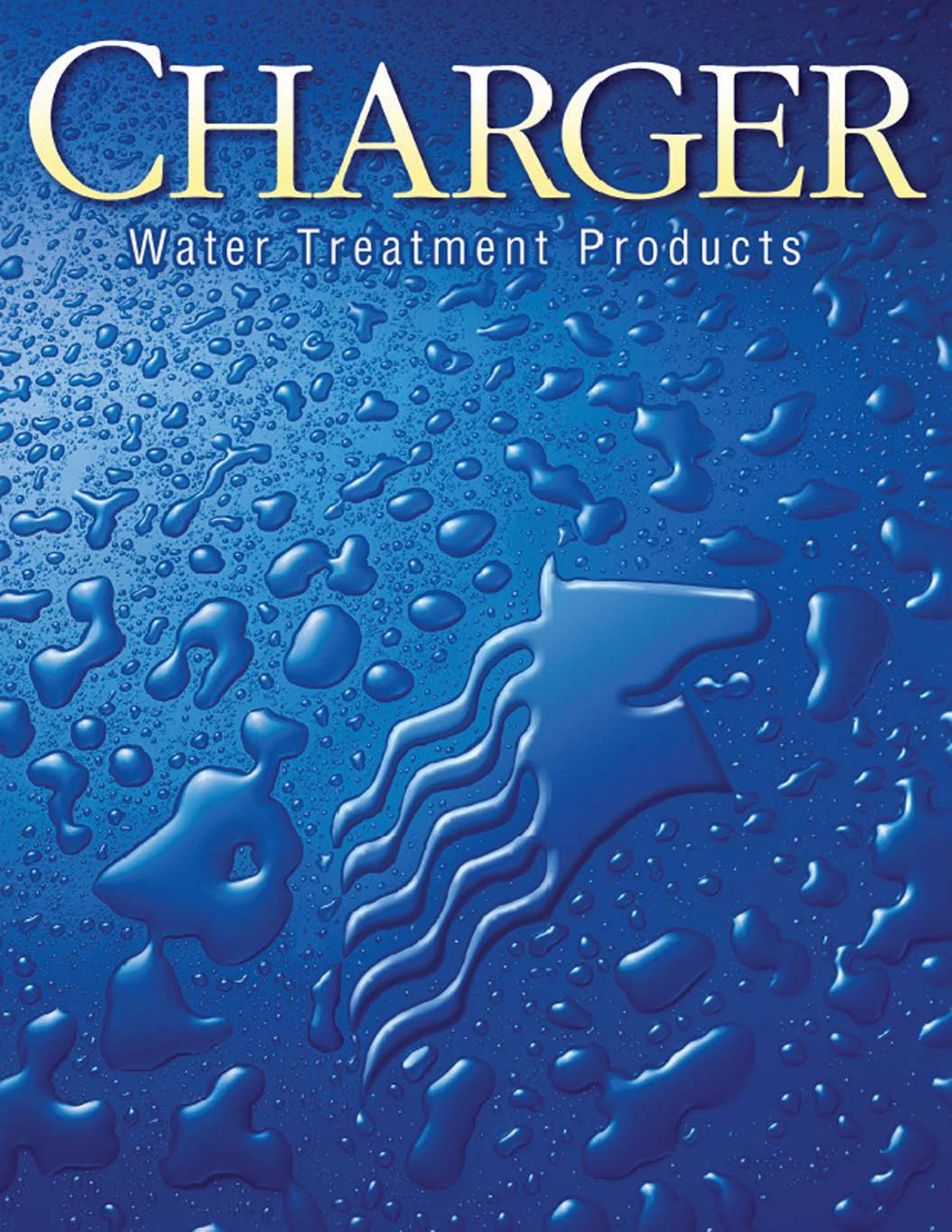
CHARGER

Water Treatment Products



FILTRATION & PROCESS | P: 262.238.4400 | F: 262.238.4404 | www.pentairaqua.com/pro

PuRoMax™

Pure R/O To The Max

The quality of drinking water is on everyone's mind today. Bottled water sales have skyrocketed. Municipal water treatment plants add chlorine to kill germs. This municipal water is tested for our safety at the plant. However many contaminants, such as lead and asbestos can be introduced by pipes that supply water to our home.

Bottled water is expensive and inconvenient. But how do you get quality water from your own refrigerator and ice maker? How do you get quality water without breaking the bank or your back?

Because coffee and tea are 99% water, they are no better than the water with which they are made. The PuRoMax system delivers better tasting coffee, tea and clearer ice. Your pets and plants will love it too.

PuRoMax Delivers!

Quality water that exceeds most bottled for only pennies a gallon.
Quality water right at your fingertips. **Quality** water for ice and prepared beverages.

COMPANY HISTORY

In 1980, Charger was founded to provide water treatment professionals with a comprehensive line of water conditioning equipment and related products. Today, Charger is a nationwide organization offering not only a complete line of products from all major manufacturers, but many unique and proprietary systems.

CAPABILITIES

Whether it is manufacturing, custom assembly and/or training, Charger supplies all the tools to help the water professional succeed. Wherever you are in the U.S., Charger has an office near you to serve your company's water treatment needs.

TRAINING

It is just as important to train you as to sell you. This is our philosophy. Every Charger branch is staffed with exceptional personnel to assist you. In addition to our trained staff, Charger employs a number of experts and professional trainers who tailor classes to the needs of regional dealers. Our seminars focus on sales, product applications and service.

SERVICE

Whether the products were purchased from Charger or our competitors, we will warranty parts from most major manufacturers. If you need help, we won't ask "Where did you buy it?". We are committed to helping you find solutions to your customers' problems. With Charger, you are never alone.

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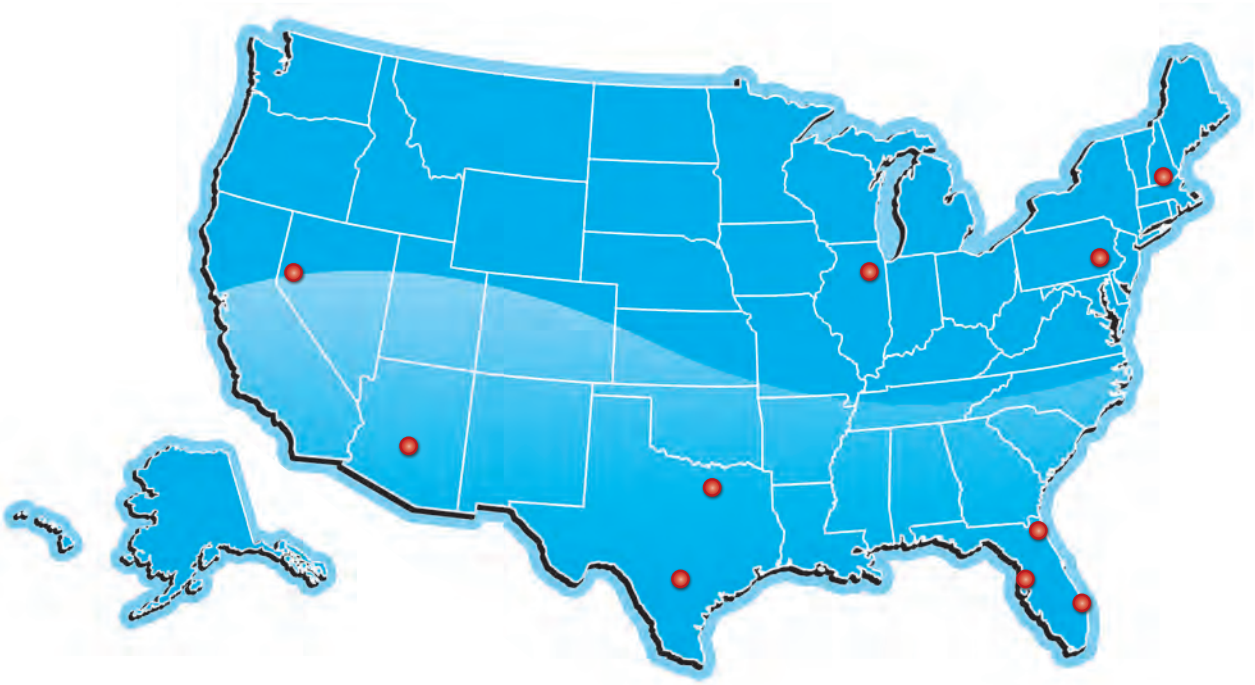
CHARGER

Charger Locations



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866-201-7853/603-935-9107
Fax 603-606-1761

Charger Water Treatment
20 N. Front Street, Suite 4
Bally, Pennsylvania 19503
800-327-5572
Fax 610-845-0376

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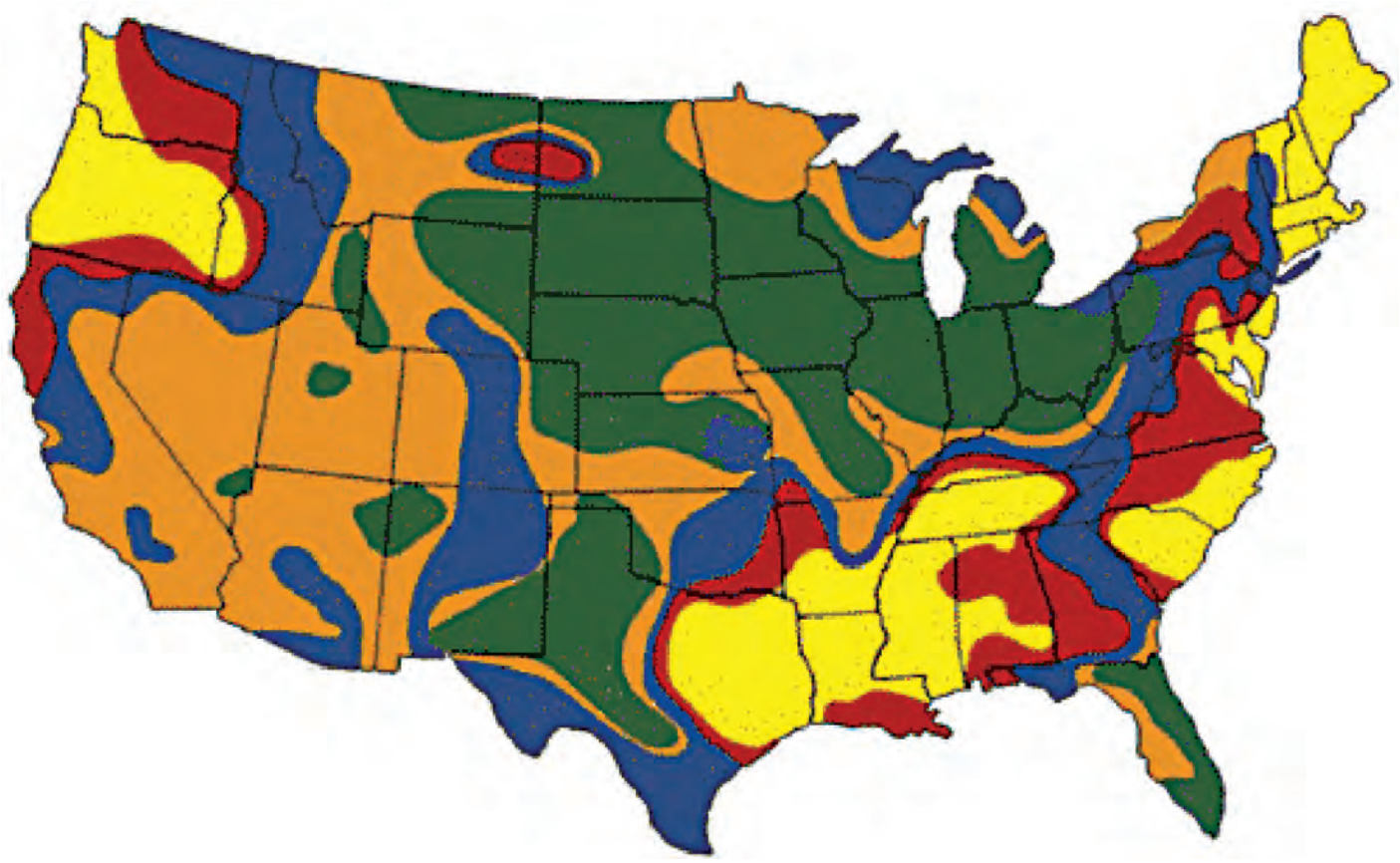
Fax: 623-398-7538
Toll Free: 844-249-3081

CHARGER

U.S. Water Levels

CHARGER



Hard Water Levels in the United States

1 Grain = 1/7000 of 1 lb.

- **Extremely Hard Water**
  Over 10½ grains per gallon
- **Hard Water**
  7 to 10 grains per gallon
- **Moderately Hard Water**
  3½ to 7 grains per gallon
- **Slightly Hard Water**
  ½ to 3½ grains per gallon
- **Soft Water**
  0 to ½ grains per gallon
- **Alaska - Moderately Hard**
  Hawaii - Soft

- An average household of four, with water hardness of 7 grains per gallon, would have the equivalent of 146 lbs. of rock in their water supply in a given year.
- Earth's water is constantly recycled by nature. We drink the same water as Adam and Eve. Earth had the same amount of water then as now.
- Earth is nearly 75% covered by water but less than 1% is fresh water, and of this, less than 1% is usable for humans.

Fleck 2510 Control

Fleck 2510 Metered Control Valve

Standard Features:

- Polywound Mineral Tank
- High-Capacity Resin
- 15x17x36" Brine Tank
- Brine Pick-Up Tube
- Fleck 2510 Control Valve

(See Fleck Unit Page For Additional Options)

Fleck 2510 | Control Valve With 12 Day Timer

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
2 Tank Model With 1" Turbulator					
42516T	10,000	16,000	8.0	7 x 35	23 x 15 x 43
42524T	16,000	24,000	8.0	7 x 44	23 x 15 x 52
42532T	20,000	32,000	8.5	8 x 44	42 x 15 x 52
42540T	24,000	40,000	9.0	9 x 48	25 x 15 x 56
42548T	30,000	50,000	9.5	10 x 44	26 x 15 x 52
42564T	40,000	64,000	9.5	10 x 54	26 x 15 x 62
42580T	50,000	80,000	11.0	12 x 48	28 x 15 x 56
42596T	60,000	96,000	12.0	13 x 54	29 x 15 x 62
2 Tank Model With 1" Standard Distributor					
42516R	10,000	16,000	8.0	7 x 35	23 x 15 x 43
42524R	16,000	24,000	8.5	8 x 44	24 x 15 x 52
42532R	20,000	32,000	9.0	9 x 48	25 x 15 x 56
42540R	24,000	40,000	9.5	10 x 44	26 x 15 x 52
42548R	30,000	50,000	9.5	10 x 54	26 x 15 x 62
42564R	40,000	64,000	11.0	12 x 48	28 x 15 x 56
42580R	50,000	80,000	12.0	13 x 54	29 x 15 x 62

Min. Grain Capacty @ 6 lbs Sale per CF, Max is 18.5 lb CF.

Fleck 2510 | Demand Regeneration Metered Control Valve

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
2 Tank Model With 1" Turbulator					
42516TM	10,000	16,000	8.0	7 x 35	23 x 15 x 43
42524TM	16,000	24,000	8.0	7 x 44	23 x 15 x 52
42532TM	20,000	32,000	8.5	8 x 44	42 x 15 x 52
42540TM	24,000	40,000	9.0	9 x 48	25 x 15 x 56
42548TM	30,000	50,000	9.5	10 x 44	26 x 15 x 52
42564TM	40,000	64,000	9.5	10 x 54	26 x 15 x 62
42580TM	50,000	80,000	11.0	12 x 48	28 x 15 x 56
42596TM	60,000	96,000	12.0	13 x 54	29 x 15 x 62
2 Tank Model With 1" Standard Distributor					
42516RM	10,000	16,000	8.0	7 x 35	23 x 15 x 43
42524RM	16,000	24,000	8.5	8 x 44	24 x 15 x 52
42532RM	20,000	32,000	9.0	9 x 48	25 x 15 x 56
42540RM	24,000	40,000	9.5	10 x 44	26 x 15 x 52
42548RM	30,000	50,000	9.5	10 x 54	26 x 15 x 62
42564RM	40,000	64,000	11.0	12 x 48	28 x 15 x 56
42580RM	50,000	80,000	12.0	13 x 54	29 x 15 x 62

Fleck 2510 | Electronic Control

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
2 Tank Model With 1" Turbulator					
42516TSXT	10,000	16,000	8.0	7 x 35	23 x 15 x 43
42524TSXT	16,000	24,000	8.0	7 x 44	23 x 15 x 52
42532TSXT	20,000	32,000	8.5	8 x 44	42 x 15 x 52
42540TSXT	24,000	40,000	9.0	9 x 48	25 x 15 x 56
42548TSXT	30,000	50,000	9.5	10 x 44	26 x 15 x 52
42564TSXT	40,000	64,000	9.5	10 x 54	26 x 15 x 62
42580TSXT	50,000	80,000	11.0	12 x 48	28 x 15 x 56
42596TSXT	60,000	96,000	12.0	13 x 54	29 x 15 x 62
2 Tank Model With 1" Standard Distributor					
42516RSXT	10,000	16,000	8.0	7 x 35	23 x 15 x 43
42524RSXT	16,000	24,000	8.5	8 x 44	24 x 15 x 52
42532RSXT	20,000	32,000	9.0	9 x 48	25 x 15 x 56
42540RSXT	24,000	40,000	9.5	10 x 44	26 x 15 x 52
42548RSXT	30,000	50,000	9.5	10 x 54	26 x 15 x 62
42564RSXT	40,000	64,000	11.0	12 x 48	28 x 15 x 56
42580RSXT	50,000	80,000	12.0	13 x 54	29 x 15 x 62

Systems of 96,000 grains or less Use a 18x33 Brine Tank.
128K & 224K Units use 24x41 Brine Tanks.
Min. Grain Capacty @ 6 lbs Sale per CF, Max is 18.5 lb CF.

Fleck 2510 | Electronic Metered Control Valve

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
2 Tank Model With 1" Turbulator					
42516TMSXT	10,000	16,000	8.0	7 x 35	23 x 15 x 43
42524TMSXT	16,000	24,000	8.0	7 x 44	23 x 15 x 52
42532TMSXT	20,000	32,000	8.5	8 x 44	42 x 15 x 52
42540TMSXT	24,000	40,000	9.0	9 x 48	25 x 15 x 56
42548TMSXT	30,000	50,000	9.5	10 x 44	26 x 15 x 52
42564TMSXT	40,000	64,000	9.5	10 x 54	26 x 15 x 62
42580TMSXT	50,000	80,000	11.0	12 x 48	28 x 15 x 56
42596TMSXT	60,000	96,000	12.0	13 x 54	29 x 15 x 62
2 Tank Model With 1" Standard Distributor					
42516RMSXT	10,000	16,000	8.0	7 x 35	23 x 15 x 43
42524RMSXT	16,000	24,000	8.5	8 x 44	24 x 15 x 52
42532RMSXT	20,000	32,000	9.0	9 x 48	25 x 15 x 56
42540RMSXT	24,000	40,000	9.5	10 x 44	26 x 15 x 52
42548RMSXT	30,000	50,000	9.5	10 x 54	26 x 15 x 62
42564RMSXT	40,000	64,000	11.0	12 x 48	28 x 15 x 56
42580RMSXT	50,000	80,000	12.0	13 x 54	29 x 15 x 62

FleckSXT 2510 Control

FleckSXT 2510 Metered Control Valve

Standard Features:

- Polywound Mineral Tank
- High-Capacity Resin
- 15x17x36" Brine Tank
- Brine Pick-Up Tube
- Fleck 2510 Metered Control Valve

(See Fleck Unit Page For Additional Options)

Fleck 2750 | Control Valve

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
2 Tank Model With 1" Standard Distributor					
42740R	24,000	40,000	9.5	10 x 44	30 x 18 x 52
42748R	30,000	50,000	9.5	10 x 54	30 x 18 x 62
42764R	40,000	64,000	11.0	12 x 48	32 x 18 x 56
42780R	50,000	80,000	12.5	13 x 54	33 x 18 x 62
42796R	60,000	96,000	15.0	14 x 65	34 x 18 x 73
427128R	80,000	125,000	20.0	16 x 65	42 x 24 x 73
427224R	120,000	224,000	21.5	21 x 62	47 x 24 x 70

Dimensions for units 96,000 Grain or Less are With 18x33 Brine Tank.
The 128K & 224K Softeners use a 24x41 Brine Tank.
Min. Grain Capacity @ 6#/CF, Max. Grain Capacity @ 18.5#/CF.

Fleck 2750 | Metered Control Valve

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
2 Tank Model With 1" Standard Distributor					
42740RM	24,000	40,000	9.5	10 x 44	30 x 18 x 52
42748RM	30,000	50,000	9.5	10 x 54	30 x 18 x 62
42764RM	40,000	64,000	11.0	12 x 48	32 x 18 x 56
42780RM	50,000	80,000	12.5	13 x 54	33 x 18 x 62
42796RM	60,000	96,000	15.0	14 x 65	34 x 18 x 73
427128RM	80,000	125,000	20.0	16 x 65	42 x 24 x 73
427224RM	120,000	224,000	21.5	21 x 62	47 x 24 x 70

Dimensions for units 96,000 Grain or Less are With 18x33 Brine Tank.
The 128K & 224K Softeners use a 24x41 Brine Tank.
Min. Grain Capacity @ 6#/CF, Max. Grain Capacity @ 18.5#/CF.

Fleck 5600 | Control With 12 Day Timer

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
Cabinet Model With 1" Turbulator					
65616T	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65624T	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65632T	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65640T	24,000	40,000	9.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Turbulator					
45616T	10,000	16,000	8.0	7 x 35	23 x 15 x 43
45624T	16,000	24,000	8.0	7 x 44	24 x 15 x 52
45632T	20,000	32,000	8.5	8 x 44	24 x 15 x 52
45640T	24,000	40,000	9.0	9 x 48	25 x 15 x 56
45648T	30,000	50,000	9.5	10 x 44	26 x 15 x 52
45664T	40,000	64,000	9.5	10 x 54	26 x 15 x 62
45680T	50,000	80,000	11.0	12 x 48	28 x 15 x 56
45696T	60,000	96,000	12.0	13 x 54	29 x 15 x 62
Cabinet Model With 1" Standard Distributor					
65616R	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65624R	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65632R	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65640R	24,000	40,000	9.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Standard Distributor					
45616R	10,000	16,000	8.0	7 x 35	23 x 15 x 43
45624R	16,000	24,000	8.5	8 x 44	24 x 15 x 52
45632R	20,000	32,000	9.0	9 x 48	24 x 15 x 52
45640R	24,000	40,000	9.5	10 x 44	25 x 15 x 56
45648R	30,000	50,000	9.5	10 x 54	26 x 15 x 52
45664R	40,000	64,000	11.0	12 x 48	26 x 15 x 62
45680R	50,000	80,000	12.0	13 x 54	28 x 15 x 56

Standard Features:

- Fleck 5600 Control w/3/4" Brass Yoke
- Polywound Mineral Tank
- High-Capacity Resin
- 15x17x36" Brine Tank
- Fleck 5600 Valve

Fleck 5600 | Ecominder Demand Regeneration, Metered Control Valve

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
Cabinet Model With 1" Turbulator					
65616TM	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65624TM	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65632TM	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65640TM	24,000	40,000	9.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Turbulator					
45616TM	10,000	16,000	8.0	7 x 35	23 x 15 x 43
45624TM	16,000	24,000	8.0	7 x 44	24 x 15 x 52
45632TM	20,000	32,000	8.5	8 x 44	24 x 15 x 52
45640TM	24,000	40,000	9.0	9 x 48	25 x 15 x 56
45648TM	30,000	50,000	9.5	10 x 44	26 x 15 x 52
45664TM	40,000	64,000	9.5	10 x 54	26 x 15 x 62
45680TM	50,000	80,000	11.0	12 x 48	28 x 15 x 56
45696TM	60,000	96,000	12.0	13 x 54	29 x 15 x 62
Cabinet Model With 1" Standard Distributor					
65616RM	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65624RM	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65632RM	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65640RM	24,000	40,000	9.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Standard Distributor					
45616RM	10,000	16,000	8.0	7 x 35	23 x 15 x 43
45624RM	16,000	24,000	8.5	8 x 44	24 x 15 x 52
45632RM	20,000	32,000	9.0	9 x 48	24 x 15 x 52
45640RM	24,000	40,000	9.5	10 x 44	25 x 15 x 56
45648RM	30,000	50,000	9.5	10 x 54	26 x 15 x 52
45664RM	40,000	64,000	11.0	12 x 48	26 x 15 x 62
45680RM	50,000	80,000	12.0	13 x 54	28 x 15 x 56

Systems are with 15x17x36" Brine Tank. Other Brine Tanks Are Available. Minimum Grain Capacity @ 6#/CF, Maximum Grain Capacity @ 18.5/CF.

Fleck 5600 Ecominder Control Valve, Brass 3/4" Yoke, Polywound Mineral Tank Turbulator or Riser Dist. 15x17x36" Brine Tank High-Capacity Resin Dimensions for 2 Tank

Fleck 5600 3/4" Metered Valve

Fleck 5600 SXT | Electronic Control

Model	Grain Capacity	Mineral Tank	Brine Tank Flow	SVC
Cabinet Model With 1" Turbulator				
65616TSXT	16,000	7 x 35	13.5 x 22.5	8.0
65624TSXT	24,000	8 x 35	13.5 x 22.5	8.5
65632TSXT	32,000	9 x 35	13.5 x 22.5	9.0
65640TSXT	40,000	10 x 35	13.5 x 22.5	9.5
Cabinet Model With 1" Standard Distributor				
65616RSXT	16,000	7 x 35	13.5 x 22.5	8.0
65624RSXT	24,000	8 x 35	13.5 x 22.5	8.5
65632RSXT	32,000	9 x 35	13.5 x 22.5	9.0
65640RSXT	40,000	10 x 35	13.5 x 22.5	9.5
2 Tank Model With 1" Turbulator				
45616TSXT	16,000	7 x 44	15 x 17	8.0
45624TSXT	24,000	7 x 44	15 x 17	8.0
45632TSXT	32,000	8 x 44	15 x 17	8.5
45640TSXT	40,000	9 x 48	15 x 17	9.0
45648TSXT	48,000	10 x 44	15 x 17	9.5
45664TSXT	64,000	10 x 54	15 x 17	9.5
45680TSXT	80,000	12 x 48	15 x 17	11.0
2 Tank Model With 1" Standard Distributor				
45616RSXT	16,000	7 x 44	15 x 17	8.0
45624RSXT	24,000	8 x 44	15 x 17	8.5
45632RSXT	32,000	9 x 48	15 x 17	9.0
45640RSXT	40,000	10 x 44	15 x 17	9.5
45648RSXT	48,000	10 x 54	15 x 17	9.5
45664RSXT	64,000	12 x 48	15 x 17	11.0
45680RSXT	80,000	13 x 54	15 x 17	12.0

Fleck
5600 SXT
Electronic
Control

Standard Features:

- Polywound Mineral Tank
- High-Capacity Resin
- 15x17x36" Brine Tank
- Brine Pick-Up Tube

Fleck 5600 SXT | Metered Control

Model	Grain Capacity	Mineral Tank	Brine Tank Flow	SVC
Cabinet Model With 1" Turbulator				
65616TMSXT	16,000	7 x 35	13.5 x 22.5	8.0
65624TMSXT	24,000	8 x 35	13.5 x 22.5	8.5
65632TMSXT	32,000	9 x 35	13.5 x 22.5	9.0
65640TMSXT	40,000	10 x 35	13.5 x 22.5	9.5
Cabinet Model With 1" Standard Distributor				
65616RMSXT	16,000	7 x 35	13.5 x 22.5	8.0
65624RMSXT	24,000	8 x 35	13.5 x 22.5	8.5
65632RMSXT	32,000	9 x 35	13.5 x 22.5	9.0
65640RMSXT	40,000	10 x 35	13.5 x 22.5	9.5
2 Tank Model With 1" Turbulator				
45616TMSXT	16,000	7 x 44	15 x 17	8.0
45624TMSXT	24,000	7 x 44	15 x 17	8.0
45632TMSXT	32,000	8 x 44	15 x 17	8.5
45640TMSXT	40,000	9 x 48	15 x 17	9.0
45648TMSXT	48,000	10 x 44	15 x 17	9.5
45664TMSXT	64,000	10 x 54	15 x 17	9.5
45680TMSXT	80,000	12 x 48	15 x 17	11.0
2 Tank Model With 1" Standard Distributor				
45616RMSXT	16,000	7 x 44	15 x 17	8.0
45624RMSXT	24,000	8 x 44	15 x 17	8.5
45632RMSXT	32,000	9 x 48	15 x 17	9.0
45640RSME	40,000	10 x 44	15 x 17	9.5
45648RMSXT	48,000	10 x 54	15 x 17	9.5
45664RMSXT	64,000	12 x 48	15 x 17	11.0
45680RMSXT	80,000	13 x 54	15 x 17	12.0

Fleck 5600 SXT Metered Control Valve

Standard Features:

- Structural Mineral Tank
- High-Capacity Resin
- 15x17x36" Brine Tank
- Brine Pick-Up Tube

Fleck 5600SXT Metered Electronic Control, 3/4" Yoke
(See Fleck Unit Page For Additional Options)

Fleck 5600 | Control

Model	Capacity	Mineral Tank Size	Brine Tank Size	Service Flow Rate	Space Required
With Fleck 5600 12 Day Control, 1" Distributor					
45632RIB	32,000 gr.	9 x 48	18 x 33	8.0	28 x 18 x 56
45640RIB	40,000 gr.	10 x 44	18 x 33	9.0	29 x 18 x 52
45648RIB	48,000 gr.	10 x 54	18 x 33	9.0	29 x 18 x 62
45664RIB	64,000 gr.	12 x 48	18 x 33	10.0	31 x 18 x 56
With Fleck 5600 12 Day Control, 1" Distributor					
45632RMIB	32,000 gr.	9 x 48	18 x 33	8.0	28 x 18 x 56
45640RMIB	40,000 gr.	10 x 44	18 x 33	9.0	29 x 18 x 52
45648RMIB	48,000 gr.	10 x 54	18 x 33	9.0	29 x 18 x 62
45664RMIB	64,000 gr.	12 x 48	18 x 33	10.0	31 x 18 x 56

Iron Breaker Softener-Filter Combination Units
Fleck 5600 Control Valve
Front Valve Cover
Tank Jacket (Available In Black, Blue & Almond)
1" Riser Distributor
18 x 33" Brine Tank
Brine Shut-Off Valve
3.5" Brine Well
Salt Grid Plate
Res-Up Feeder Fleck 5600 3/4" Control

Fleck 5600SXT | Control

Model	Capacity	Mineral Tank Size	Brine Tank Size	Service Flow Rate	Space Required
With Fleck 5600SXT Electronic Control, 1" Distributor					
45632RIBSXT	32,000 gr.	9 x 48	18 x 33	8.0	28 x 18 x 56
45640RIBSXT	40,000 gr.	10 x 44	18 x 33	9.0	29 x 18 x 52
45648RIBSXT	48,000 gr.	10 x 54	18 x 33	9.0	29 x 18 x 62
45664RIBSXT	64,000 gr.	12 x 48	18 x 33	10.0	31 x 18 x 56
With Fleck 5600SXT Electronic Metered Control, 1" Distributor					
45632RMIBSXT	32,000 gr.	9 x 48	18 x 33	8.0	28 x 18 x 56
45640RMIBSXT	40,000 gr.	10 x 44	18 x 33	9.0	29 x 18 x 52
45648RMIBSXT	48,000 gr.	10 x 54	18 x 33	9.0	29 x 18 x 62
45664RMIBSXT	64,000 gr.	12 x 48	18 x 33	10.0	31 x 18 x 56

Fleck 5600SXT Electronic Control Valve
Front Valve Cover
Tank Jacket (Available In Black, Blue & Almond)
1" Riser Distributor
18 x 33" Brine Tank
Brine Shut-Off Valve
3.5" Brine Well
Salt Grid Plate
Res-Up Feeder

Standard Features:

- Brass 3/4" Bypass
- Structural Mineral Tank

Fleck 5000SXT & 5600 | Control

Model	Media Type	Media CF	Tank Size	Service Flow Rate	Floor Space	Shipping Weight
Fleck 5000SXT, 1" Control						
50FA9GF	Greensand	1.0	9 x 48	5.0	56 x 25 x 15	120
50FA10GF	Greensand	1.5	10 x 54	6.0	62 x 26 x 15	170
50FA9B	Birm	1.0	9 x 48	5.0	56 x 11 x 11	75
50FA10B	Birm	1.5	10 x 54	6.0	62 x 11 x 11	100
50FA9C	Carbon	1.0	9 x 48	5.0	56 x 11 x 11	60
50FA10C	Carbon	1.5	10 x 54	6.0	62 x 11 x 11	85
50FA9CL	Calcite	1.0	9 x 48	5.0	56 x 11 x 11	110
50FA10CL	Calcite	1.5	10 x 54	6.0	62 x 11 x 11	150
50FA9AG	Filter-AG	1.0	9 x 48	5.5	56 x 11 x 11	65
50FA10AG	Filter-AG	1.5	10 x 54	6.5	62 x 11 x 11	90
Fleck 5600, 3/4" Control						
56FA9GF	Greensand	1.0	9 x 48	4.5	56 x 25 x 15	120
56FA10GF	Greensand	1.5	10 x 54	5.5	62 x 26 x 15	170
56FA9B	Birm	1.0	9 x 48	4.5	56 x 11 x 11	75
56FA10B	Birm	1.5	10 x 54	5.5	62 x 11 x 11	100
56FA9C	Carbon	1.0	9 x 48	4.5	56 x 11 x 11	60
56FA10C	Carbon	1.5	10 x 54	5.5	62 x 11 x 11	85
56FA9CL	Calcite	1.0	9 x 48	4.5	56 x 11 x 11	110
56FA10CL	Calcite	1.5	10 x 54	5.5	62 x 11 x 11	150
56FA9AG	Filter-AG	1.0	9 x 48	4.5	56 x 11 x 11	65
56FA10AG	Filter-AG	1.5	10 x 54	6.0	62 x 11 x 11	90

Fleck 5000SXT & 5600
Control

Standard Features:

- 1" or 3/4" Pipe Boss
- 1" Distributor
- Polywound Mineral Tank
- Filter Media

Fleck 5600SXT Metered Electronic Control, 3/4" Yoke
(See Fleck Unit Page For Additional Options)

Fleck 5000 SXT | ProFlow Control

Model	Grain Capacity	Mineral Tank	Brine Tank Flow	SVC Flow
Cabinet Models With 1" Turbulator Backwash				
65016TSXT	16,000	7 x 35	13.5 x 22.5	9.0
65024TSXT	24,000	8 x 35	13.5 x 22.5	9.5
65032TSXT	32,000	9 x 35	13.5 x 22.5	10.0
65040TSXT	40,000	10 x 35	13.5 x 22.5	10.5
Cabinet Model With 1" Standard Distributors				
65016RSXT	16,000	7 x 35	13.5 x 22.5	9.0
65024RSXT	24,000	8 x 35	13.5 x 22.5	9.5
65032RSXT	32,000	9 x 35	13.5 x 22.5	10.0
65040RSXT	40,000	10 x 35	13.5 x 22.5	10.5
2 Tank Model With 1" Turbulator Backwash				
45016TSXT	16,000	7 x 44	15 x 17	9.0
45024TSXT	24,000	7 x 44	15 x 17	9.0
45032TSXT	32,000	8 x 44	15 x 17	9.5
45040TSXT	40,000	9 x 48	15 x 17	10.0
45048TSXT	48,000	10 x 44	15 x 17	10.5
45064TSXT	64,000	10 x 54	15 x 17	12
45080TSXT	80,000	12 x 48	15 x 17	13.0
2 Tank Model With 1" Standard Distributors				
45016RSXT	16,000	7 x 44	15 x 17	9.0
45024RSXT	24,000	8 x 44	15 x 17	9.5
45032RSXT	32,000	9 x 48	15 x 17	10.0
45040RSXT	40,000	10 x 44	15 x 17	10.5
45048RSXT	48,000	10 x 54	15 x 17	10.5
45064RSXT	64,000	12 x 48	15 x 17	12.0
45080RSXT	80,000	13 x 54	15 x 17	13.0

Fleck 5000 SXT
ProFlow
Control

Standard Features:

- Fleck 5000SXT Electronic Control, w/1" Yoke
- Structural Mineral Tank
- High-Capacity Resin
- 15 x 17 x 36" Brine Tank
- Brine Pick-Up Tube

(See Fleck Unit Page For Additional Options)

Fleck 5000SXT Metered Computer Control

Fleck 5000SXT | Metered Computer Control

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size	Space Required
Cabinet Model With 1" Turbulator Backwash					
65016TMSXT	10,000	16,000	9.0	7 x 35	13 x 21 x 46
65024TMSXT	16,000	24,000	9.5	8 x 35	13 x 21 x 46
65032TMSXT	20,000	32,000	10.0	9 x 35	13 x 21 x 46
65040TMSXT	24,000	40,000	10.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Turbulator Backwash					
45016TMSXT	10,000	16,000	9.0	7 x 44	23 x 15 x 43
45024TMSXT	16,000	24,000	9.0	7 x 44	23 x 15 x 52
45032TMSXT	20,000	32,000	9.5	8 x 44	24 x 15 x 52
45040TMSXT	24,000	40,000	10.0	9 x 48	25 x 15 x 56
45048TMSXT	30,000	48,000	10.0	10 x 44	26 x 15 x 52
45064TMSXT	40,000	64,000	10.5	10 x 54	26 x 15 x 62
45080TMSXT	50,000	80,000	12.0	12 x 48	28 x 15 x 56
45096TMSXT	60,000	96,000	13.0	13 x 54	29 x 15 x 62
Cabinet Model With 1" Standard Distributor					
65016RMSXT	10,000	16,000	9.0	7 x 35	13 x 21 x 46
65024RMSXT	16,000	24,000	9.5	8 x 35	13 x 21 x 46
65032RMSXT	20,000	32,000	10.0	9 x 35	13 x 21 x 46
65040RMSXT	24,000	40,000	10.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Standard Distributor					
45016RMSXT	10,000	16,000	9.0	7 x 44	23 x 15 x 43
45024RMSXT	16,000	24,000	9.5	8 x 44	24 x 15 x 52
45032RMSXT	20,000	32,000	10.0	9 x 48	25 x 15 x 56
45040RMSXT	24,000	40,000	10.5	10 x 44	26 x 15 x 52
45048RMSXT	30,000	50,000	10.5	10 x 54	26 x 15 x 62
45064RMSXT	40,000	64,000	12.0	12 x 48	28 x 15 x 56
45080RMSXT	50,000	80,000	13.0	13 x 54	29 x 15 x 62

Fleck 6700 | Electronic Metered Control Valve

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size	Space Required
Cabinet Model With 1" Standard Distributor					
66716RM	16,000	7 x 35	15 x 17 x 36	8.0	23 x 15 x 43
66724RM	24,000	8 x 44	15 x 17 x 36	8.5	24 x 15 x 52
66732RM	32,000	9 x 48	15 x 17 x 36	9.0	25 x 15 x 56
66740RM	40,000	10 x 44	15 x 17 x 36	9.5	26 x 15 x 52
2 Tank Model With 1" Standard Distributor					
46716RM	16,000	7 x 35	15 x 17 x 36	8.0	23 x 15 x 43
46724RM	24,000	8 x 44	15 x 17 x 36	8.5	24 x 15 x 52
46732RM	32,000	9 x 48	15 x 17 x 36	9.0	25 x 15 x 56
46740RM	40,000	10 x 44	15 x 17 x 36	9.5	26 x 15 x 52
46748RM	48,000	10 x 54	15 x 17 x 36	9.5	26 x 15 x 62
46764RM	64,000	12 x 48	15 x 17 x 36	11.0	28 x 15 x 56
46780RM	80,000	13 x 54	15 x 17 x 36	12.0	29 x 15 x 62

Standard Features:

- Fleck 5000SXT Metered Control w/1" Yoke
- Structural Mineral Tank
- High-Capacity Resin
- 15 x 17 x 36" Brine Tank

Units At Left Are Down Flow Brining. See Fleck Unit Page For Upflow Brining Option.

Fleck 6700 Control
w/Down Flow Brining
1" Distributor
Structural Mineral Tank
Fleck 6700 Control
High Capacity Resin
15X17X36" Brine Tank

(See Fleck Unit Page For Additional Options)

Fleck/Pentair 7000 | Valve

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required
2 Tank Model With 1" Standard Distributor					
47032R	16,000	32,000	11.5	9 x 48	30 x 18 x 52
47040R	24,000	40,000	12.0	10 x 44	30 x 18 x 52
47048R	30,000	50,000	15.5	10 x 54	30 x 18 x 62
47064R	40,000	64,000	15.5	12 x 48	32 x 18 x 56
47080R	50,000	80,000	19.0	13 x 54	33 x 18 x 62
47096R	60,000	96,000	19.5	14 x 65	34 x 18 x 73
470128R	80,000	120,000	20.0	16 x 65	42 x 24 x 73
470224R	90,000	180,000	21.5	21 x 62	47 x 24 x 70

Dimensions For Units 96,000 Grain or Less Are With 18x33" Brine Tank.
The 120K & 180K Softeners Come With A 24x41" Brine Tank.
Min.Capacity @ 6#/CF, Max. Grain Capacity @ 18.5#/CF.

Fleck/Pentair 7000 | Metered Valve

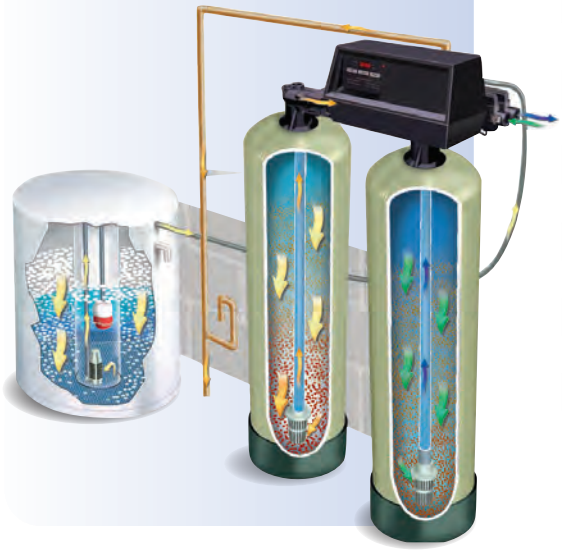
Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required
2 Tank Model With 1" Standard Distributor					
47032RM	16,000	32,000	11.5	9 x 48	30 x 18 x 52
47040RM	24,000	40,000	12.0	10 x 44	30 x 18 x 52
47048RM	30,000	50,000	15.5	10 x 54	30 x 18 x 62
47064RM	40,000	64,000	15.5	12 x 48	32 x 18 x 56
47080RM	50,000	80,000	19.0	13 x 54	33 x 18 x 62
47096RM	60,000	96,000	19.5	14 x 65	34 x 18 x 73
470128RM	80,000	128,000	20.0	16 x 65	42 x 24 x 73
470224RM	90,000	180,000	21.5	21 x 62	47 x 24 x 70

Dimensions For Units 96,000 Grain or Less Are With 18x33" Brine Tank.
The 120K & 180K Softeners use A 24x41" Brine Tank.
Min. Grain Capacity @ 6#/CF, Max. Grain Capacity @ 18.5#/CF.

Fleck/Pentair 7000 Valve

Fleck 9000101
Twin Alternating Control Valve

Fleck 9000101SXT
Electronic Twin Alternating Control Valve



Fleck 9000101 | 1" Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Alternating Unit With 1" Turbulator Distributor						
9000-16	7 x 44	15 x 17 x 33	16,000	11.6	15.7	1.2
9000-24	7 x 44	15 x 17 x 33	24,000	12.4	16.7	1.5
9000-32	8 x 44	15 x 17 x 33	32,000	13.2	17.7	2.0
9000-40	9 x 48	15 x 17 x 33	40,000	14.4	19.1	2.4
9000-48	10 x 44	18 x 33	48,000	13.4	17.9	2.4
9000-64	10 x 54	18 x 40	64,000	14.6	19.3	3.5
9000-80	12 x 48	18 x 40	80,000	14.9	19.6	4.0
9000-96	13 x 54	24 x 41	96,000	15.0	19.9	3.5
9000-128	14 x 65	24 x 41	128,000	16.2	20.0	7.0

Service Flow Rates Are Calculated At 5 GPM/CF For Best Softening. Service Flow Rates Are For 14", 16", & 21" Tanks Reduced To 12.5 GPM During Regeneration. Allow 4 Hours Between Regeneration For Proper Brining.

Fleck 9000101SXT | 1" Electronic Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Alternating Unit With 1" Turbulator Distributor						
900016SXT	7 x 44	15 x 17 x 33	16,000	11.6	15.7	1.2
900024SXT	7 x 44	15 x 17 x 33	24,000	12.4	16.7	1.5
900032SXT	8 x 44	15 x 17 x 33	32,000	13.2	17.7	2.0
900040SXT	9 x 48	15 x 17 x 33	40,000	14.4	19.1	2.4
900048SXT	10 x 44	18 x 33	48,000	13.4	17.9	2.4
900064SXT	10 x 54	18 x 33	64,000	14.6	19.3	3.5
900080SXT	12 x 48	18 x 40	80,000	14.9	19.6	4.0
900096SXT	13 x 54	24 x 41	96,000	15.0	19.9	3.5
9000128SXT	14 x 65	24 x 41	128,000	16.2	20.0	7.0

Service Flow Rates Are Calculated At 5 GPM/CF For Best Softening. Service Flow Rates Are For 14", 16" & 21" Tanks Reduced To 12.5 GPM During Regeneration. Allow 4 Hours Between Regeneration For Proper Brining.

Standard Features:

- Fleck 9000101 or 9000101SXT Control Valve
- 3/4" NPT Yoke
- Structural Fibers Mineral Tank
- 1" Turb Distributor
- Poly Brine Tank
- 3/4" Meter
- High-Capacity Resin
- Model Tank Brine Capacity List
- Size Tank Per Tank Price

Fleck 9000101 | 1" Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
9000-24	8 x 44	15 x 17 x 33	24,000	12.4	16.7	1.5
9000-32	9 x 48	15 x 17 x 33	32,000	13.2	17.7	2.0
9000-40	10 x 44	15 x 17 x 33	40,000	14.4	19.1	2.4
9000-48	10 x 54	18 x 33	48,000	13.4	17.9	2.4
9000-64	12 x 48	18 x 40	64,000	14.6	19.3	3.5
9000-80	13 x 54	18 x 40	80,000	14.9	19.6	4.0
9000-96	14 x 65	24 x 41	96,000	15.0	19.9	3.5
9000-128	16 x 65	24 x 41	128,000	16.2	20.0	7.0

Service Flow Rates Are Calculated At 5 GPM/CF For Best Softening. Service Flow Rates Are For 14", 16" & 21" Tanks Reduced To 12.5 GPM During Regeneration. Allow 4 Hours Between Regeneration For Proper Brining.

Fleck 9000101SXT | 1" Electronic Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Alternating Unit With 1" Standard Distributor						
900024SXT	8 x 44	15 x 17 x 33	24,000	12.4	16.7	1.5
900032SXT	9 x 48	15 x 17 x 33	32,000	13.2	17.7	2.0
900040SXT	10 x 44	15 x 17 x 33	40,000	14.4	19.1	2.4
900048SXT	10 x 54	18 x 33	48,000	13.4	17.9	2.4
900064SXT	12 x 48	18 x 40	64,000	14.6	19.3	3.5
900080SXT	13 x 54	18 x 40	80,000	14.9	19.6	4.0
900096SXT	14 x 65	24 x 41	96,000	15.0	19.9	3.5
9000128SXT	16 x 65	24 x 41	128,000	16.2	20.0	7.0

Service Flow Rates Are Calculated At 5 GPM/CF For Best Softening. Service Flow Rates Are For 14", 16" & 21" Tanks Reduced To 12.5 GPM During Regeneration. Allow 4 Hours Between Regeneration For Proper Brining.

Fleck 9000101
Twin Alternating Control Valve

Fleck 9000101SXT
Twin Alternating Control Valve

Standard Features:

- Fleck 9000101 or 9000101SXT Control Valve
- 3/4" NPT Yoke
- Structural Fibers Mineral Tank
- 1" High-Flow Distributor
- Poly Brine Tank
- 3/4" Meter
- High-Capacity Resin

Fleck 9000104
Twin Alternating Control Valve

Fleck 9000104SXT
Electronic Twin Alternating Control Valve

Fleck 9000104 | 1" Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Alternating Unit With 1" Standard Distributor						
9000-24	8 x 44	15 x 17 x 33	24,000	12.4	16.7	1.5
9000-32	9 x 48	15 x 17 x 33	32,000	13.2	17.7	2.0
9000-40	10 x 44	15 x 17 x 33	40,000	14.4	19.1	2.4
9000-48	10 x 54	18 x 33	48,000	13.4	17.9	2.4
9000-64	12 x 48	18 x 40	64,000	14.6	19.3	3.5
9000-80	13 x 54	18 x 40	80,000	14.9	19.6	4.0
9000-96	14 x 65	24 x 41	96,000	15.0	19.9	3.5
9000-128	16 x 65	24 x 41	128,000	16.2	20.0	7.0

Service Flow Rates Are Calculated At 5 GPM/CF For Best Softening. Service Flow Rates Are For 14", 16" & 21" Tanks Reduced To 12.5 GPM During Regeneration. Allow 4 Hours Between Regeneration For Proper Brining.

Fleck 9000104SXT | 1" Electronic Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Alternating Unit With 1" Turbulator Distributor						
900024SXT	8 x 44	15 x 17 x 33	24,000	12.4	16.7	1.5
900032SXT	9 x 48	15 x 17 x 33	32,000	13.2	17.7	2.0
900040SXT	10 x 44	15 x 17 x 33	40,000	14.4	19.1	2.4
900048SXT	10 x 54	18 x 33	48,000	13.4	17.9	2.4
900064SXT	12 x 48	18 x 40	64,000	14.6	19.3	3.5
900080SXT	13 x 54	18 x 40	80,000	14.9	19.6	4.0
900096SXT	14 x 65	24 x 41	96,000	15.0	19.9	3.5
9000128SXT	16 x 65	24 x 41	128,000	16.2	20.0	7.0

Service Flow Rates Are Calculated At 5 GPM/CF For Best Softening. Service Flow Rates Are For 14", 16" & 21" Tanks Reduced To 12.5 GPM During Regeneration.

Standard Features:

- Fleck 9000104 or 9000104SXT Control Valve
- 3/4" NPT Yoke
- Structural Fibers Mineral Tank
- 1" High-Flow Distributor
- Poly Brine Tank
- 3/4" Meter
- High-Capacity Resin

Fleck 9000 | Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Tank Model With 1" Distributor						
9000-321B	9 x 48	18 x 33	32,000	13.0	17.7	1.5
9000-401B	10 x 44	18 x 33	40,000	14.5	19.1	2.0
9000-481B	10 x 54	18 x 33	48,000	13.4	17.9	2.0

Fleck 9000 Twin Alternating Control Valve Regenerates Unit And Refills Brine Tank With Soft Water.
Fleck 9000 1" Metered Twin Alternating Control

Fleck 9000SXT | Electronic Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Alternating Units With 9000SXT Electronic Metered Control Valve						
9000-32IBS	9 x 48	18 x 33	32,000	13.0	17.7	1.5
9000-40IBS	10 x 44	18 x 33	40,000	14.5	19.1	2.0
9000-48IBS	10 x 54	18 x 33	48,000	13.4	17.9	2.0

Fleck 9000 Twin Alternating Control Valve Regenerates Unit And Refills Brine Tank With Soft Water.
Fleck 9000SXT Twin Alternating Control, With Softwater Brine Refill

Fleck 9000
Twin Alternating Control Valve

Fleck 9000SXT
Twin Alternating Control Valve

Standard Features:

- Brass 3/4" Bypass
- Front Valve Cover
- Structural Fibers Mineral Tank
- Tank Jacket (Available In Black, Blue & Almond)
- 1" Riser Distributor
- 18 x 33" Brine Tank
- Brine Shut-Off Valve
- Salt Grid Plate
- Res-Up Feeder

Fleck 9100101
Twin Alternating Control Valve

Fleck 9000104SXT
Electronic Twin Alternating Control Valve

Fleck 9100101 | 1" Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Alternating Unit With 1" Turbulator Distributor						
9100-16	7 x 44	15 x 17 x 33	16,000	11.6	15.7	1.2
9100-24	7 x 44	15 x 17 x 33	24,000	12.4	16.7	1.5
9100-32	8 x 44	15 x 17 x 33	32,000	13.2	17.7	2.0
9100-40	9 x 48	15 x 17 x 33	40,000	14.4	19.1	2.4
9100-48	10 x 44	15 x 17 x 33	48,000	13.4	17.9	2.4
9100-64	10 x 54	15 x 17 x 33	64,000	14.6	19.3	3.5
9100-80	12 x 48	15 x 17 x 33	80,000	14.9	19.6	4.0
9100-96	13 x 54	24 x 41	96,000	15.0	19.9	3.5
9100-128	14 x 65	24 x 41	128,000	16.2	20.0	7.0

Service Flow Rates Are Calculated At 5 GPM/CF For Best Softening. Service Flow Rates Are For 14",16" & 21" Tanks Reduced To 12.5 GPM During Regeneration. Allow 4 Hours Between Regeneration For Proper Brining.

Fleck 9100SXT | 1" Electronic Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Alternating Unit With 1" Turbulator Distributor						
910016SXT	7 x 44	15 x 17 x 33	16,000	11.6	15.7	1.2
910024SXT	7 x 44	15 x 17 x 33	24,000	12.4	16.7	1.5
910032SXT	8 x 44	15 x 17 x 33	32,000	13.2	17.7	2.0
910040SXT	9 x 48	15 x 17 x 33	40,000	14.4	19.1	2.4
910048SXT	10 x 44	15 x 17 x 33	48,000	13.4	17.9	2.4
910064SXT	10 x 54	15 x 17 x 33	64,000	14.6	19.3	3.5
910080SXT	12 x 48	15 x 17 x 33	80,000	14.9	19.6	4.0
910096SXT	13 x 54	24 x 41	96,000	15.0	19.9	3.5
9100128SXT	14 x 65	24 x 41 1	28,000	16.2	20.0	7.0

Service Flow Rates Are Calculated At 5 GPM/CF For Best Softening. Service Flow Rates Are For 14",16" & 21" Tanks Reduced To 12.5 GPM During Regeneration. Allow 4 Hours Between Regeneration For Proper Brining.

Standard Features:

- Fleck 9100101 or 9100101SXT Control Valve
- 3/4" NPT Yoke
- Polywound Mineral Tank
- 1" Turb Distributor
- 15 x 17 x 33" Brine Tan
- 3/4" Meter
- High-Capacity Resin

Fleck 9100 | Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Alternating Unit With 1" Standard Distributor						
9100-24	8 x 44	15 x 17 x 33	24,000	14.6	19.3	3.5
9100-32	9 x 48	15 x 17 x 33	32,000	14.9	19.6	4.0
9100-40	10 x 44	15 x 17 x 33	40,000	15.0	19.9	3.5
9100-48	10 x 54	18 x 33	48,000	12.4	16.7	1.5
9100-64	12 x 48	18 x 40	64,000	13.2	17.7	2.0
9100-80	13 x 54	18 x 40	80,000	14.4	19.1	2.4
9100-96	14 x 65	24 x 41	96,000	13.4	17.9	2.4
9100-128	16 x 65	24 x 41	128,000	16.2	20.0	7.0

Service Flow Rates Are Calculated At 5 GPM/CF For Best Softening. Service Flow Rates Are For 14", 16" Tanks Reduced To 12.5 GPM During Regeneration. Allow 4 Hours Between Regeneration For Proper Brining.

Fleck 9100SXT | Electronic Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Alternating Unit With 1" Standard Distributor						
910024SXT	8 x 44	15 x 17 x 33	24,000	14.6	19.3	3.5
910032SXT	9 x 48	15 x 17 x 33	32,000	14.9	19.6	4.0
910040SXT	10 x 44	15 x 17 x 33	40,000	15.0	19.9	3.5
910048SXT	10 x 54	18 x 33	48,000	12.4	16.7	1.5
910064SXT	12 x 48	18 x 40	64,000	13.2	17.7	2.0
910080SXT	13 x 54	18 x 40	80,000	14.4	19.1	2.4
910096SXT	14 x 65	24 x 41	96,000	13.4	17.9	2.4
9100128SXT	16 x 65	24 x 41	128,000	16.2	20.0	7.0

Service Flow Rates Are Calculated At 5 GPM/CF For Best Softening. Service Flow Rates Are For 14", 16" Tanks Reduced To 12.5 GPM During Regeneration. Allow 4 Hours Between Regeneration For Proper Brining.

Fleck 9000
Twin Alternating Control Valve

Fleck 9000SXT
Twin Alternating Control Valve

Standard Features:

- Fleck 9100104 or 9100104SXT Control Valve
- 1" NPT Yoke
- Polywound Mineral Tank
- 1" High-Flow Distributor
- Poly Brine Tank
- 3/4" Meter
- High-Capacity Resin

Fleck 9100104
Twin Alternating Control Valve

Fleck 9100 | Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Tank Model With 1" Distributor						
9100-321B	9 x 48	18 x 33	32,000	13.0	17.7	1.5
9100-401B	10 x 44	18 x 33	40,000	14.5	19.1	2.0
9100-481B	10 x 54	18 x 33	48,000	13.4	17.9	2.0

Fleck 9000 Twin Alternating Control Valve Regenerates Unit And Refills Brine Tank With Soft Water.
Fleck 9000 1" Metered Twin Alternating Control
Model Tank Brine Capacity List
Size Tank Per Tank Price

Fleck 9000SXT | Electronic Twin Alternating Control Valve

Model	Tank Size	Brine Tank	Capacity Per Tank	SVC	Flow Rates:	
					PK	BW
Twin Alternating Units With 9100SXT Electronic Metered Control Valve						
9100-32IBS	9 x 48	18 x 33	32,000	13.0	17.7	1.5
9100-40IBS	10 x 44	18 x 33	40,000	14.5	19.1	2.0
9100-48IBS	10 x 54	18 x 33	48,000	13.4	17.9	2.0

Fleck 9100 Twin Alternating Control Valve Regenerates Unit And Refills Brine Tank With Soft Water.
Fleck 9100SXT Twin Alternating Control, With Softwater Brine Refill

Standard Features:

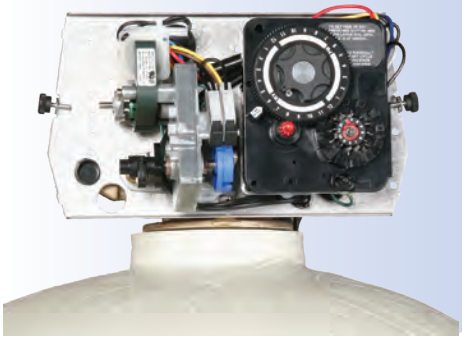
- SS 3/4" Bypass
- Structural Mineral Tank
- Front Valve Cover
- Tank Jacket (Available In Black, Blue & Almond)
  1" Riser Distributor
- 18 x 33" Brine Tank
- Brine Shut-Off Valve
- 3.5" Brine Well Fleck
- Salt Grid Plate
- Res-Up Iron Cleaner Feeder

Control Valves | By Fleck Controls

2510100	2510 5 Cycle, 7 or 12 Day Clock	3/4"
2510101	2510 5 Cycle, Metered Demand Regen.	3/4"
2510100SXT	2510 5 Cycle, Electronic Timer	3/4"
2510101SXT	2510 5 Cycle, Electronic Timer, Metered	3/4"
2510100FC	2510 Filter Application Valve	3/4"
2510100SXTFC	2510 Filter Application Valve, Electronic	3/4"
2750100	2750 5 Cycle, 1" 7 or 12 Day Timer	1"
2750101	2750 5 Cycle, 1" Meter Demand Regen.	1"
2750103	2750 5 Cycle, Manual Regeration	1"
2700100	2700 5 Cycle, 7 or 12 Day Timer	1"
2700101	2700 5 Cycle, Meter Demand Regen.	1"
2850200	2850 1.5" Comm. Valve, 7 or 12 Day	1-1/2"
2850201	2850 1.5" Comm. 1", Meter Demand Regen.	1-1/2"
2900200NT	2900 Control W/NT Electronics	2"
2900201NT	2900 Metered Control W/NT Electronics	2"
2900200	2900 2" Valve, 7 or 12 Day Timer	2"
2900201	2900 2" Valve, 2" Meter Demand Regen.	2"
3150200	3150 2" Top Mount, 7 or 12 Day Timer	2"
3150201	3150 2" Top Mount, 2" Metered Regen.	2"
3900300	3900 3" 5 Cycle, 7 or 12 Day Timer	3"
3900301	3900 3" 5 Cycle, 3" Meter Demand Regen.	3"
5000100SXT	ProFlo 5000 1" 5 Adjustable Cycle, Electronic Timer	1"
5000101SXT	ProFlo 5000 1" 5 Adjustable Cycle, Meter Demand Regen.	1"
5600100	5600 3/4" 6 Cycle, 7 or 12 day Timer	3/4"
5600100SXT	5600 3/4" 6 Adjustable Cycle, Electronic Timer	3/4"
5600101	5600 3/4" 6 Cycle, Metered Demand Regen.	3/4"
5600101SXT	5600 3/4" 6 Adjustable Cycle, Metered Regen.	3/4"
7000101	7000SXT 1" Metered Control Valve	1"
7000100FC	7000100FC 1" Backwash Filter Valve	1"
6700101	SXT 6700 6 Cycle, Adjustable Cycle Electronic Meter Demand	3/4"
9000101SXT	Twin-Alternating 1" 9000, Electronic Demand Metered	1"
9000104	Twin-Alternating 1" 9000, Demand 1" Metered	1"
9100101SXT	Twin-Alternating 1" 9100, Demand, SXT Electronics	1"
9100101	Twin-Alternating 1" 9100, Demand Metered	1"
9000104SXT	Twin-Alternating 1" 9000, Electronic Demand 1" Metered	1"
9500101	9500/1600 Twin-Alternating 1.5" Valve, Metered	1-1/2"
9500201	9500/1700 Twin-Alternating 1.5" Valve, Metered	1-1/2"
3100002	3100 2" Remote Reset Meter	2"
3900003	3900 3" Remote Reset Meter	3"

For Yokes, Bypass's and Additional Valve Options, See Enclosed Fleck Parts Booklet

Charger 2850 Commercial Units



Fleck 2850 | 1.5" Control Valve

Model	Grain Capacity	Tank Size	Resin CF	Brine Tank	Salt Fill	Flow Rates:		
						SVC	PK	BW
1-1/2" Top Mount Valve With 12 Day Clock								
FTM90-1.5	90,000	14 x 65	3.0	24 x 41	700	30	42	5
FTM120-1.5	120,000	16 x 65	4.0	24 x 41	700	33	45	7
FTM150-1.5	150,000	21 x 62	5.0	24 x 41	700	40	50	10
FTM180-1.5	180,000	21 x 62	6.0	24 x 50	800	40	50	10
FTM210-1.5	210,000	21 x 62	7.0	24 x 50	800	40	50	10
FTM240-1.5	240,000	24 x 71	8.0	24 x 50	800	41	55	15
FTM270-1.5	270,000	24 x 71	9.0	24 x 50	800	41	5	15
FTM300-1.5	300,000	24 x 71	10.0	24 x 50	800	41	55	15
FTM330-1.5	330,000	24 x 71	11.0	24 x 50	800	41	55	15
FTM450-1.5	450,000	30 x 72	15.0	30 x 48	1,200	41	55	25

Service Flow Rates Are Calculated @ 15 psi Pressure Drop. Peak Rates @ 25 psi Pressure Drop.

Fleck 2850 | 1.5" Metered Control Valve

Model	Grain Capacity	Tank Size	Resin CF	Brine Tank	Salt Fill	Flow Rates:		
						SVC	PK	BW
FTM90154	90,000	14 x 65	3.0	24 x 41	700	30	42	5
FTM120154	120,000	16 x 65	4.0	24 x 41	700	33	45	7
FTM150154	150,000	21 x 62	5.0	24 x 41	700	40	50	10
FTM180154	180,000	21 x 62	6.0	24 x 50	800	40	50	10
FTM210154	210,000	21 x 62	7.0	24 x 50	800	40	50	10
FTM240154	240,000	24 x 71	8.0	24 x 50	800	41	55	15
FTM270154	270,000	24 x 71	9.0	24 x 50	800	41	5	15
FTM300154	300,000	24 x 71	10.0	24 x 50	800	41	55	15
FTM330154	330,000	24 x 71	11.0	24 x 50	800	41	55	15
FTM450154	450,000	30 x 72	15.0	30 x 48	1,200	41	55	25

Service Flow Rates Are Calculated @ 15 psi Pressure Drop. Peak Rates @ 25 psi Pressure Drop.

Charger 2900 | Control Valve

Model	Grain Capacity	Tank Size	Resin CF	Gravel	Brine Tank	Salt Fill	Flow Rates:		
							SVC	PK	BW
Fleck 2900 2" Top Mount Valve With 12 Day Clock									
FTM90	90,000	14 x 65	3.0	60	24 x 41	700	30	50	90
FTM120	120,000	16 x 65	4.0	80	24 x 41	700	40	60	07
FTM150	150,000	21 x 62	5.0	150	24 x 41	700	55	76	10
FTM180	180,000	21 x 62	6.0	155	24 x 50	800	55	76	10
FTM210	210,000	21 x 62	7.0	155	24 x 50	800	55	76	10
FTM240	240,000	24 x 71	8.0	200	24 x 50	800	65	90	15
FTM270	270,000	24 x 71	9.0	200	24 x 50	800	65	90	15
FTM300	300,000	24 x 71	10.0	200	24 x 50	800	65	90	15
FTM330	330,000	24 x 71	11.0	200	24 x 50	800	65	85	15
FTM450	450,000	30 x 72	15.0	325	30 x 48	1,200	85	100	25
FTM600	600,000	36 x 72	20.0	475	39 x 60	2,600	90	105	30

Service Flow Rates Are Calculated @ 15 psi Pressure Drop.
Peak Flow Rates Are Calculated @ 25 psi Pressure Drop.

Fleck 2900 2" Top Mount Valve-System 4-Meter Regeneration

FTM90-4	90,000	14 x 65	3.0		24 x 41	700	30	50	5
FTM120-4	120,000	16 x 65	4.0		24 x 41	700	40	60	7
FTM150-4	150,000	21 x 62	5.0		24 x 41	700	55	75	10
FTM180-4	180,000	21 x 62	6.0		24 x 50	800	55	75	10
FTM210-4	210,000	21 x 62	7.0		24 x 50	800	55	75	10
FTM240-4	240,000	24 x 71	8.0		24 x 50	800	65	90	15
FTM270-4	270,000	24 x 71	9.0		24 x 50	800	65	90	15
FTM300-4	300,000	24 x 71	10.0		24 x 50	800	65	90	15
FTM330-4	330,000	24 x 71	11.0		24 x 50	800	65	90	15
FTM450-4	450,000	30 x 72	15.0		30 x 48	1,200	85	100	25
FTM600-4	600,000	36 x 72	20.0		39 x 60	2,600	90	105	30

System #4 - Typical Single Tank With Optional Meter.

Charger 9500 | 1-1/2" Commercial Units

Model	Grain Capacity	Tank Size	Resin CF	Brine Tank	Flow Rates:		
					SVC	PK	BW
9500 1-1/2" Twin Alternating Control							
9500-70	70,000	13 x 54 (2)	2.25	24 x 41	20	27	4.0
9500-90	90,000	14 x 65 (2)	3.0	24 x 41	22	30	5.0
9500-120	120,000	16 x 65 (2)	4.0	24 x 41	25	34	7.0
9500-150	150,000	21 x 62 (2)	5.0	24 x 41	31	41	10.0
9500-180	180,000	21 x 62 (2)	6.0	24 x 41	30	40	10.0
9500-210	210,000	21 x 62 (2)	7.0	24 x 41	29	39	10.0
9500-240	240,000	24 x 71 (2)	8.0	24 x 51	32	42	15.0
9500-300	300,000	24 x 71 (2)	10.0	24 x 51	30	40	15.0

Charger
Calcite Filters

Charger 9500
Commercial Units

Fleck 2900 | 2" Top Mount Valve - System 5 Units

Model	Grain Capacity*	Tank Size	Resin CF	Brine Tank	Salt Fill	Flow Rates:		
						SVC	PK	BW
FTM90-5	90,000	14 x 65 (2)	3.0	24 x 41 (2)	700	30	108	5
FTM120-5	120,000	16 x 65 (2)	4.0	24 x 41 (2)	700	40	128	7
FTM150-5	150,000	21 x 62 (2)	5.0	24 x 41 (2)	700	50	162	10
FTM180-5	180,000	21 x 62 (2)	6.0	24 x 50 (2)	800	60	154	10
FTM210-5	210,000	21 x 62 (2)	7.0	24 x 50 (2)	800	70	146	10
FTM240-5	240,000	24 x 71 (2)	8.0	24 x 50 (2)	800	80	172	15
FTM270-5	270,000	24 x 71 (2)	9.0	24 x 50 (2)	800	90	168	15
FTM300-5	300,000	24 x 71 (2)	10.0	24 x 50 (2)	800	100	186	15
FTM330-5	330,000	24 x 71 (2)	11.0	24 x 50 (2)	800	110	164	15
FTM450-5	450,000	30 x 72 (2)	15.0	30 x 48 (2)	1,200	150	210	25
FTM600-5	600,000	36 x 72 (2)	20.0	39 x 60 (2)	2,600	180	210	30

System #5 Interlock - Typical Installation W/Meter Interlock & NoHard Water Bypass.
*Per Tank

Fleck 2900 | 2" Top Mount Valve - System 6 Units

Model	Grain Capacity*	Tank Size	Resin CF	Brine Tank	Salt Fill	Flow Rates:		
						SVC	PK	BW
FTM90-6	90,000	14 x 65 (2)	3.0	24 x 41 (2)	700	30	108	5
FTM120-6	120,000	16 x 65 (2)	4.0	24 x 41 (2)	700	40	128	7
FTM150-6	150,000	21 x 62 (2)	5.0	24 x 41 (2)	700	50	162	10
FTM180-6	180,000	21 x 62 (2)	6.0	24 x 50 (2)	800	60	154	10
FTM210-6	210,000	21 x 62 (2)	7.0	24 x 50 (2)	800	70	146	10
FTM240-6	240,000	24 x 71 (2)	8.0	24 x 50 (2)	800	80	172	15
FTM270-6	270,000	24 x 71 (2)	9.0	24 x 50 (2)	800	90	168	15
FTM300-6	300,000	24 x 71 (2)	10.0	24 x 50 (2)	800	100	186	15
FTM330-6	330,000	24 x 71 (2)	11.0	24 x 50 (2)	800	110	164	15
FTM450-6	450,000	30 x 72 (2)	15.0	30 x 48 (2)	1,200	150	210	25
FTM600-6	600,000	36 x 72 (2)	20.0	39 x 60 (2)	2,600	180	210	30

System #6 - Twin Series Regeneration.
2 Tanks; 1 Meter; Series Regeneration System. Both In Service simultaneously.
When Meter zeros Lead Unit Regenerates. As Lead Unit Returns To Service Position,The Lag Unit Will Regenerate.
*Per Unit

Fleck 2900 | 2" Top Mount Valve - System 7 Units

Model	Grain Capacity*	Tank Size	Resin CF	Brine Tank	Salt Fill	Flow Rates:		
						SVC	PK	BW
FTM90-7	90,000	14 x 65 (2)	3.0	24 x 41	700	15	54	5
FTM120-7	120,000	16 x 65 (2)	4.0	24 x 41	700	20	64	7
FTM150-7	150,000	21 x 62 (2)	5.0	24 x 41	700	25	81	10
FTM180-7	180,000	21 x 62 (2)	6.0	24 x 50	800	30	77	10
FTM210-7	210,000	21 x 62 (2)	7.0	24 x 50	800	35	73	10
FTM240-7	240,000	24 x 71 (2)	8.0	24 x 50	800	40	86	15
FTM270-7	270,000	24 x 71 (2)	9.0	24 x 50	800	45	84	15
FTM300-7	300,000	24 x 71 (2)	10.0	24 x 50	800	50	93	15
FTM330-7	330,000	24 x 71 (2)	11.0	24 x 50	800	55	82	15
FTM450-7	450,000	30 x 72 (2)	15.0	30 x 48	1,200	75	105	25
FTM600-7	600,000	36 x 72 (2)	20.0	39 x 60	2,600	90	105	30

System #7 - Twin Alternator Installation.
2 Tanks; 1 Meter; Alternator System. One In Service, The Other Is On Stand-by.
In Service Goes Into A Regeneration Cycle, The Stand-by unit Goes Into Service.
Call Factory For Price If Two Brine Tanks Are Needed. Service Flow Rates Calc. At 5 GPM/CF
*Per Tank

Fleck 3900 | 3" Top Mount Valve - System 6 Units

Model	Grain Capacity	Tank Size	Resin CF	Brine Tank	Flow Rates:		
					SVC	PK	BW
Fleck 3900 3" Top Mount Valve System 6*							
FTM300-3-6	300,000	24 x 72 (2)	10.0	24 x 50 (2)	50	170	15
FTM450-3-6	450,000	30 x 72 (2)	15.0	30 x 48 (2)	75	212	25
FTM600-3-6	600,000	36 x 72 (2)	20.0	39 x 60 (2)	100	250	35
FTM900-3-6	900,000	42 x 72 (2)	30.0	42 x 60 (2)	150	268	50
FTM1200-3-6	1,200,000	48 x 72 (2)	40.0	42 x 60 (2)	200	280	60
FTM1500-3-6	1,500,000	63 x 67 (2)	50.0	50 x 60 (2)	250	250	60

*2 Tanks, 1 Meter, 2 Brine Tanks, Series Regeneration. Both Units In Service At The Same Time. When Meter Zeroes Out, The Lead Unit Regenerates. Once The Lead Unit Has Returned To The Service Position, Lag Unit Will Regenerate

Fleck 3900 Valve

Fleck 3900 | 3" Top Mount Valve - System 7 Units

Model	Grain Capacity	Tank Size	Resin CF	Brine Tank	Flow Rates:		
					SVC	PK	BW
Fleck 3900 3" Top Mount Valve: System 7*							
FTM300-3-7	300,000	24 x 72 (2)	10.0	24 x 50	50	170	15
FTM450-3-7	450,000	30 x 72 (2)	15.0	30 x 48	75	212	25
FTM600-3-7	600,000	36 x 72 (2)	20.0	39 x 60	100	250	35
FTM900-3-7	900,000	42 x 72 (2)	30.0	42 x 60	150	268	50
FTM1200-3-7	1,200,000	48 x 72 (2)	40.0	42 x 60	200	280	60
FTM1500-3-7	1,500,000	63 x 67 (2)	50.0	50 x 60	250	250	60

*2 Tanks, 1 Meter, Alternator System. One Unit In Service, The Other Is On Stand-by. When The Meter Zeroes Out, The Unit In Service Goes Into A Regeneration Cycle, The Stand-by Unit Goes Into Service.

Fleck 3900 | 3" Top Mount Valve - System 4 Units

Model	Grain Capacity	Tank Size	Resin CF	Brine Tank	Flow Rates:		
					SVC	PK	BW
Fleck 3900 3" Control Valve							
FTM300-3	300,000	24 x 72	10.0	24 x 50	50	170	15
FTM450-3	450,000	30 x 72	15.0	30 x 48	75	212	25
FTM600-3	600,000	36 x 72	20.0	39 x 60	100	250	35
FTM900-3	900,000	42 x 72	30.0	42 x 60	150	268	50
FTM1200-3	1,200,000	48 x 72	40.0	42 x 60	200	280	60
FTM1500-3	1,500,000	63 x 67	50.0	50 x 60	250	250	60
Fleck 3900 3" Top Mount Valve System 4*-Metered							
FTM300-3-4	300,000	24 x 72	10.0	24 x 50	50	170	15
FTM450-3-4	450,000	30 x 72	15.0	30 x 48	75	212	25
FTM600-3-4	600,000	36 x 72	20.0	39 x 60	100	250	35
FTM900-3-4	900,000	42 x 72	30.0	42 x 60	150	268	50
FTM1200-3-4	1,200,000	48 x 72	40.0	42 x 60	200	280	60
FTM1500-3-4	1,500,000	63 x 67	50.0	50 x 60	250	250	60

*1 Tank, 1 Meter

CHARGER

CHARGER

Model 2750

1" Control Valve

Features

- Suitable for large residential/light commercial applications
- Fully adjustable, 5-cycle control delivers controlled upflow backwash, downflow brining and slow rinse, rapid rinse, timed brine refill, and downflow service
- Backwash capacity handles tanks up to 24" diameter
- Solid, lead-free brass* valve body
- Time tested, hydraulically-balanced piston, seal, and spacer concept to pilot service flow and regeneration

Options

- Filter or softener control valves
- Hot water up to 150°F for any 1700 brine system or metered control valve
- Hot water up to 180°F for any filter or 1600 brine system or metered control valve
- Manual operation (filter or softener)
- Service valve operator
- No hard water bypass
- Electronic timer, SXT, XT, 3214NXT, or 3200NXT
- Environmental cover
- Auxiliary switches
- Meter delayed or immediate initiated regeneration

Valve Specifications	
Valve material	Lead-free brass*
Inlet/Outlet	1" NPTM
Cycles	5
Flow Rates (50 psi Inlet) - Valve Alone	
Continuous (15 psi drop)	26 GPM
Peak (25 psi drop)	33 GPM
Cv (flow at 1 psi drop)	6.8
Max. backwash (25 psi drop)	25 GPM
Regeneration	
Downflow	Downflow only
Adjustable cycles	Yes
Time available	Electromechanical: 164 minutes SXT: 199 minutes per cycle NXT: 240 minutes per cycle XT: 240 minutes per cycle
Meter Information	
Meter accuracy	.75" - .25 - 15 GPM +/- 5% 1" - 0.7 - 40 GPM +/- 5%
Meter capacity range (gal.)	Standard: 310 - 5,270 Extended: 1,550 - 26,350 SXT: 1 - 999,900 NXT: 9,900,000 XT: 1,000 - 9,900,000
Dimensions	
Distributor pilot	1.05" O.D.
Drain line	3/4" NPTM
Injector brine system	1600 & 1050 - 3/8" 1700 & 1710 - 1/2"
Brine line	3/8" & 1/2"
Mounting base	2-1/2" - 8 NPSM
Height from top of tank	6 - 1/2"
Typical Applications	
Water softener	10" - 24" diameter
Filter	10" - 21" diameter
Electrical Rating	
24 v, 110 v, 220 v - 50 Hz, 60 Hz **	
Additional Information	
Estimated shipping weight	Time clock: 13 lbs. Metered valve: 26 lbs.
Pressure	Hydrostatic: 300 psi Working: 20 - 125 psi
Temperature	34° - 110° F

* As defined in the U.S. EPA Safe Drinking Water Act; the product also meets California Proposition 65 Standards

** 24 VAC Pentair Transformers:
115 VAC +/- 20% Input, 24 VAC Output
230 VAC +/- 20% Input, 24 VAC Output

Part No. 40737 Rev B 7/09

TESTED AND CERTIFIED by the WQA
to NSF/ANSI STD. 61 Section 8
Material Safety Only and ANNEX "G"

Model 2850

1.5" Control Valve

Features

- Fully adjustable, 5-cycle control delivers controlled upflow backwash, downflow brining and slow rinse, rapid rinse, timed brine refill and downflow service
- Time-tested hydraulically balanced piston, seal and spacer design to pilot service flow and regeneration
- Solid, lead-free brass* valve body for superior strength and durability
- Backwash capacity handles tanks up to 30˝ diameter
- 1-1/2" top mount control valve ideal for smaller size commercial/ industrial applications
- Consistent brining regardless of salt levels with timed brine refills
- Choice of 7 or 12 day clock, manual or meter
- Continuous flow rate of 51 GPM with a backwash of 49 GPM
- Ideal for most filter applications up to 24"

Options

- Meter-initiated regeneration
- Backwash filter
- No hard water bypass
- Environmental cover
- Electronic timer, 3200NXT, 3214NXT, or XT
- Hot water (time clock 180°F; metered valve 150°F)
- Manual operation
- Service valve operator
- Auxilary switch
- Side mount

Valve Specifications	
Valve material	Lead-free brass*
Inlet/Outlet	1-1/2" NPTF
Cycles	5
Flow Rates (50 psi Inlet) - Valve Alone	
Continuous (15 psi drop)	51 GPM side mount
Peak (25 psi drop)	66 GPM side mount
Cv (flow at 1 psi drop)	13-1/5
Max. backwash (25 psi drop)	49 GPM
Regeneration	
Downflow/Upflow	Downflow only
Adjustable cycles	Yes
Time available	Electromechanical: 164 minutes SXT: 0 - 99 minutes per cycle NXT: 240 minutes per cycle XT: Up to 240 minutes per cycle
Meter Information	
Meter accuracy	7/10 - 40 GPM +/- 5% (1") 1-1/2 - 75 GPM +/- 5% (1-1/2")
Meter capacity range (gal.)	
1" Standard	310 - 5,270
1" Extended	1,150 - 26,350
1-1/2" Standard	625 - 10,625
1-1/2" Extended	3,125 - 53,125
3200NT	2,900,000
3214NT	9,900,000
XT	1,000 - 9,900,000
Dimensions	
Distributor pilot	1-9/10" O.D.
Drain line	1" NPTM
Injector brine system	1600 & 1650 - 3/8" 1700 - 1/2"
Brine line	3/8" & 1/2"
Mounting base	4" - 8 UN
Height from top of tank	6 - 1/2"
Additional Information	
Electrical rating	24 v, 110 v, 220 v - 50 Hz, 60 Hz
Max. VA	72
Estimated shipping weight	Time clock: 19 lbs. Metered valve: 27 lbs.
Pressure	Hydrostatic: 300 psi Working: 20 - 125 psi
Temperature	34° - 110° F

*As defined in the U.S. EPA Safe Drinking Water Act; the product also meets California Proposition 65 Standards

Part No. 40726 Rev B 7/09

TESTED AND CERTIFIED by the WQA
to NSF/ANSI STD. 61 Section 8
Material Safety Only and ANNEX "G"

CHARGER

Model 2900

2" Control Valve

Features

- Incorporates 2 time-tested, hydraulically-balanced pistons to independently pilot service flow and regeneration
- For use with single or multiple tank systems
- Backwashes softener tanks up to 36" diameter
- Continuous flow rate of 106 GPM
- Lead-free brass* valve body for superior strength and durability

Options

- Meter delayed or immediate initiated regeneration
- No hard water bypass
- Electronic timer, XT, 3200NXT and 3214NXT
- Service valve operator
- Auxiliary switches
- Environmental cover
- Upflow regeneration
- Side mount
- Treated water regeneration
- Choice of 7 or 12 day timer
- Hot water up to 180°F for any filter or 1600 brine system or metered control valve
- Hot water up to 150°F for any 1700 brine system or metered control valve
- Filter or softener control valve

Valve Specifications	
Valve material	Lead-free brass*
Inlet/Outlet	2"
Cycles	5

Flow Rates (50 psi Inlet) - Valve Alone		
Regeneration direction	Downflow	
Treated water regeneration	No	Yes
Continuous (15 psi drop)	106	
Peak (25 psi drop)	140	
Cv (flow at 1 psi drop)	27.5	
Max. backwash (25 psi drop)	36	

Regeneration	
Downflow/Upflow	Both
Adjustable cycles	Yes
Time available	Electromechanical: 164 minutes 3200NXT: 240 minutes per cycle 3214NXT: 240 minutes per cycle XT: 240 minutes per cycle

Meter Information	
Meter accuracy range	3-150 GPM +/- 5%
Meter capacity range (gal.)	Standard: 1,250 - 21,250 3200NXT: 9,900,000 3214NXT: 9,900,000 XT:1,000 - 9,900,000

Dimensions	
Distributor pilot	1.5" pipe I.D.
Drain line	1" NPTM
Injector brine system	1600 & 1650 - 3/8" 1700 & 1710 - 1/2"
Mounting base	4" - 8 UN
Height from top of tank	12"

Additional Information	
Electrical rating	24 v, 110 v, 220 v - 50 Hz, 60 Hz
Estimated shipping weight	Time clock: 33 lbs. Metered valve: 40 lbs.
Pressure	Hydrostatic: 300 psi Working: 20 - 125 psi
Temperature	Cold Water: 34° - 110° F

Typical Applications	
Water softener	14" - 36" diameter
Filters	14" - 30" diameter

* As defined in the U.S. EPA Safe Drinking Water Act; the product also meets California Proposition 65 Standards
Based on 10 GPM/sq. ft. for filter applications.

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Material Safety Only and ANNEX "G"

Part No. 40738 Rev B 7/09

Model 3150

2" Control Valve

Features

- Fully adjustable, 5-cycle control is efficient and reliable, delivering controlled upflow backwash, downflow brining and downflow service
- Versatile top or side mount is suitable for commercial or industrial applications
- Backwash capacity accommodates tanks up to 63" diameter
- Solid, lead-free brass* construction for superior strength and durability
- Protective NEMA 3R equivalent enclosure is rain tight, and UV stable
- Flexible 7 or 12 day time clock or meter initiated regeneration
- Ideal for most filter applications up to 42"

Options

- Filter or softener control valve
- Meter delayed or immediate initiated regeneration
- Service valve operator
- Side mount
- Electronic timer, 3200NXT, 3214NXT, or XT
- Choice of 7 or 12 day timer
- Hot water up to 180°F for any filter or 1600 brine system or metered control valve
- Hot water up to 150°F for any 1700 brine system or metered control valve
- No hard water bypass
- Upflow regeneration
- Auxiliary switch

Valve Specifications	
Valve material	Lead-free brass*
Inlet/Outlet	2" NPTF
Cycles	5

Flow Rates (50 psi Inlet) - Valve Alone		
Flow rate (50 psi Inlet)	Top mount	Side mount
Continuous (15 psi drop)	95 GPM	100 GPM
Peak (25 psi drop)	124 GPM	129 GPM
Cv (flow at 1 psi drop)	24.8	25.9
Max. backwash (25 psi drop)	105 GPM	109 GPM

Regeneration	
Downflow/Upflow	Both
Adjustable cycles	Yes
Time available	Electromechanical: 164 minutes 3200NXT: 240 minutes per cycle 3214NXT: 240 minutes per cycle XT: Up to 240 minutes per cycle

Meter Information	
Meter accuracy	3 - 150 GPM +/- 5%
Meter capacity range (gal.)	Standard: 1,250 - 21,250 Extended: 6,250 - 106,250 3200NXT: 2,900,000 3214NXT: 9,900,000 XT: 1,000 - 9,900,000

Dimensions	
Distributor pilot	2" pipe I.D.
Drain line	2" NPTF
Injector brine system	1"
Brine line	1" NPTM
Mounting base	Top mount: 4" - 8 UN
Height from top of tank	10"

Additional Information	
Electrical rating	24 v, 110 v - 50 Hz, 60 Hz
Estimated shipping weight	Time clock: 39 lbs. Metered value: 46 lbs.
Pressure	Hydrostatic: 300 psi Working: 20 - 125 psi
Temperature	34° - 110° F

* As defined in the U.S. EPA Safe Drinking Water Act; the product also meets California Proposition 65 Standards

Part No. 40741 Rev B 7/09

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Material Safety Only and ANNEX "G"

Model XT

Advanced Electronic Controller

The XT advanced electronic controller is available for single control valve operation. The XT can be configured to the Fleck® 2510, 2750, 2850, 2900, 3150, 3900, 9000, 9100 and 9500 valves.

In Time Clock Delay mode, the XT will display the number of days until the next scheduled regeneration. Some meter delated types will display the colume remaning (SRV) minus the reserve. Once the volume remaining is zero, the display will start counting down the reserve volume and queue (RGQ) regeneration.

Features

- Time of day backup for up to 12 hours of power loss
- Calculating Reserves:
  Daily Variable - adjusts reserve based on previous day's water usage
  Day of Week - adjusts reserve for each day of the week based on an average of the last three weeks
- LED Status Indicator:
  Blue: In Service
  Green: In Regeneration
  Red: Error with codes
- New shift key (left arrow) for digit selecting, allows faster programming
- 2 Line/16 character LCD backlit display
- Defaults for all valve, piston, and cam types are stored
- Diagnostics:
  Current Flow Rate
  Peak Flow Rate (can be reset)
  Totalizer (can be reset)
  Hours between Last two Regenerations
  Hours between Last Regeneration
  Volume Remaining (Adjustable)
  Precious Days Usage
  Reserve Volume
  Software Version
- Uses same mounting hardware and cable harness as the 3200NXT and 3214NXT
- Easy installation with plug-in wiring harnesses

Options

- Programmable auxiliary relay output:
  - Dry contact Relay (fused at 3 amps)
  - Program entire Regeneration
  - Two programmable time windows during regeneration
- Remote Lock
- Programmable for Fleck® or generic meters

System Type	
Meter Delayed Weekly Reserve	Single Valve
Meter Delayed Variable Reserve	Single Valve
Meter Delayed Fixed Reserve	Single Valve
Meter Immediate	Single Valve
Remote Signal Start Delayed	Single Valve
Remote Signal Start Immediate	Single Valve
Time Clock Delayed	Single Valve
Twin Tank	Single Valve
Volume Override Delayed	Single Valve
Volume Override Immediate	Single Valve

Regenerant Flow

Downflow, Upflow Variable Fill, Upflow Brine First, Downflow DB BW, Upflow Backwash, Backwash Filter

Valve Type

2510, 2750, 2850, 2850s, 2900, 3150, 3900, 9000, 9100, & 9500

Generic Meter Guidelines

Meter power supply is +19V DC, up to 10 mA. 01-150 pulses per gallon/liter output. Open collector output, board will sink up to 10mA at 5V DC. Pulse rate generated must not exceed 100 pulses per second (100 Hz) or 6,000 pulses per minute

Electrical Rating

24V Pentair transformers:
115V AC +/- input, 24V AC output
230V AC +/- input, 24V AC output

Humidity

95% RH, Non-condensing

Two Programming Levels

User Mode:
- Water Hardness
- Regeneration Day Override
- Regeneration Time

Master Programming:
- System Type
- Valve Type
- Regenerant Flow
- Display Format
- Unit Capacity
- Capacity Safety Factor
- Water Hardness
- Regeneration Day Override
- Regeneration Time
- Cycle Steps
- Auxiliary Relay Outputs
- Flow Meter Sizes

Model 3214NXT

Demand Flow Network Controller

The 3214NXT Demand Flow Network Controller is available to configure with all commercial Fleck® 2750, 2850, 2900, 3150, and 3900 Control Valves. This demand flow system can be programmed to bring multiple units to the service position and back to standby based on system demand flow. The 3214NXT Demand Flow Network Controller uses on-board communication capabilities to link multiple valves via standard CAT3, CAT5, or better communication cables.

Features

- Network two to four valves
- Simple, on-site network programming
- Easy installation with plug-in wiring harnesses
- Shift key allows digit selecting in programming
- 2x16 character LCD backlit display (letter or digit codes not needed)
- Valve, piston, and cam type default storage
- User and master programming modes
- Diagnostic mode:
  - Current flow rate
  - Peak flow rate (can be reset)
  - Totalizer (can be reset)
  - Hours between last two regenerations
  - Hours since last regeneration
  - Volume remaining (adjustable)
  - Valve addresses

Options

- CAT 3 networking cable kit
- Remote lock
- Programmable for Fleck® and generic meters
- Programmable auxiliary relay output:
  - Dry contact relay (fused at 3 amps)
  - Program entire regeneration or during any part of regeneration
  - Chemical pump output (volume and time)

Three programming levels

- User mode
- Master programming
- Diagnostic mode

System Types	
System Type 14	2 - 4 Valves (meter on each valve)

Regenerant Flow
Downflow, Upflow Brine Draw First, Upflow Refill First

Regeneration Type
Meter Immediate

Generic Meter Guidelines
Open collector output.
Board will sink up to 1-mA @ 5 V DC.
Support for meter outputs in the range of 1-255 gallons (25.5 m^3) for every 1-255 pulses. Example: 35 gallons/100 pulses (= 3.5 gallons/10 pulses, = 0.35 gallons/1 pulse).

Electrical Rating
24 VAC Pentair® Transformers: 115 VAC +/- 20% input, 24 VAC output 230 VAC +/- 20% input, 24 VAC output

Humidity
95% RH, Non-Condensing

CHARGER

Model 3900

3" Control Valve

Features

- Fully adjustable, 5-cycle control delivers upflow back wash, downflow brining, slow rinse, rapid rinse and down flow service
- Designed for single tank or multi-tank systems, alternating or interlocking
- Continuous flow rate of 250 GPM
- Protective NEMA 3R enclosure is water-resistant, corrosion-resistant, and UV stable
- Choice of 7 or 12 day clock or meter initiated regeneration

Options

- Meter delayed or immediate initiated regeneration
- Upflow regeneration
- Service valve operator
- No hard water bypass
- Auxiliary switches
- Side mount

Valve Specifications	
Valve material	Lead-free brass*
Inlet/Outlet	3" NPT
Cycles	5

Flow Rates (50 psi Inlet) - Valve Alone	
Flow rate (50 psi Inlet)	Top mount
Continuous (15 psi drop)	250 GPM
Peak (25 psi drop)	325 GPM
Cv (flow at 1 psi drop)	65
Max. backwash (25 psi drop)	100 GPM

Regeneration	
Downflow/Upflow	Both
Adjustable cycles	Yes
Time available	Electromechanical: 164 minutes 3200NXT: 240 minutes per cycle 3214NXT: 240 minutes per cycle XT: 240 minutes per cycle

Meter Information	
Meter accuracy	7 - 300 GPM +/- 5%
Meter capacity range (gal.)	Standard: 3,750 - 63,750 Extended: 18,750 - 318,750 3200NXT: 9,900,000 3214NXT: 9,900,000 XT: 9,900,000

Dimensions	
Distributor pilot	3" O.D.
Drain line	2" NPTF
Injector brine system	1"
Mounting base	Top: 6" - 8 threaded or flanged
Height from top of tank	15"

Additional Information	
Electrical rating	24 v, 110 v, 200 v - 50 Hz, 60 Hz
Estimated shipping weight	Time clock: 93 lbs. Metered value: 115 lbs.
Pressure	Hydrostatic: 300 psi Working: 20 - 125 psi
Temperature	34° - 110° F

* As defined in the U.S. EPA Safe Drinking Water Act; the product also meets California Proposition 65 Standards

Part No. 40742 Rev B 7/09

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Material Safety Only and ANNEX "G"

Model 5600

Mechanical Control Valve

Back (without cover)

Features

- Simple mechanical design is easy to use
- Two valve body designs: one for downflow regeneration and one for upflow (covers every valve in the 5600 family - quick access to all internal components)
- Injector/drain modules containing the brine valve, flow controls, and injector are removable from the valve's exterior
- Ruggedly-built timer is designed with heavy-duty 3/8" wide plastic gears
- 5600 controls are user-friendly
- Non-corrosive, UV-resistant, fiber-reinforced polymer valve body
- Economical - small annual power consumption; keeps the time and activates the piston/valve mechanics with a single motor
- Designed with double backwash

Options

- Bypass valve (Fiber-reinforced polymer or stainless steel)
- Low water use piston (uses as little as 29 gal./regeneration)
- Choice of 7 or 12 day clock timers
- Filter or softener control valve
- Upflow or downflow regeneration control valve

Valve Specifications	
Valve material	Fiber-reinforced polymer
Inlet/Outlet	3/4", 1", 1-1/4"
Cycles	7
Flow Rates (50 psi Inlet) - Valve Alone	
Continuous (15 psi drop)	20 GPM
Peak (25 psi drop)	26 GPM
Cv (flow at 1 psi drop)	5
Max. backwash (25 psi drop)	7 GPM
Regeneration	
Downflow/Upflow	Both
Adjustable cycles	Brine fill only
Time available	180 minutes per cycle
Meter Information	
Meter accuracy	.25 - 15 GPM +/- 5%
Meter capacity range (gal.)	Standard: 125 - 2,125 Extended: 625 - 10,625
Dimensions	
Distributor pilot	13/16" or 1.05" O.D.
Drain line	1/2" NPTF
Injector brine system	1600
Brine line	3/8"
Mounting base	2-1/2" - 8 NPSM
Height from top of tank	7"
Typical Applications	
Water softener	6" - 12" diameter
Filters	8" - 10" diameter
Electrical rating	
24 v, 110 v, 220 v - 50 Hz, 60 Hz *	
Additional Information	
Estimated shipping weight	Time clock: 5 lbs Metered valve: 6 lbs.
Pressure	Hydrostatic: 300 psi Working: 20 - 125 psi
Temperature	34° - 110° F
Approvals	
NSF Standard 44 Certified	
UL registered components	

* 24 VAC Pentair Transformers:
115 VAC +/- 20% Input, 24 VAC Output
230 VAC +/- 20% Input, 24 VAC Output

Part No. 40730 Rev C

CHARGER

Model 5600SXT

Control Valve

Back without cover

Product Features

- Large LCD display with 48 hours of internal power backup capacitor
- LCD display alternates between time of day, volume remaining or days to regeneration, and tank in service (twin tank systems only)
- Compact turbine meter
- Downflow or upflow regeneration cycles
- Choose from 4 modes of operation: immediate meter regeneration, delayed meter regeneration, delayed time clock regeneration or day of week regeneration
- Continuous flow rate of 20 GPM
- Backwash capacity handles tanks up to 12" diameter for softener applications, 10" for filter applications
- Double backwash capability

Options

- Bypass valve
- Softener or filter control valves
- Backwash filter
- Upflow or downflow regeneration
- Meter or day initiated regeneration
- Double backwash
- Auxiliary switches

Valve Specifications	
Valve Material	Fiber Reinforced Polymer
Inlet/Outlet	3/4", 1", 1-1/4"
Cycles	5

Flow Rates (50 psi Inlet) - Valve Alone	
Continuous (15 psi drop)	20 GPM
Peak (25 psi drop)	26 GPM
CV (flow at 1 psi drop)	5.0
Max. Backwash (25 psi drop)	7 GPM

Regeneration	
Downflow/Upflow	Both
Adjustable Cycles	Yes
Time Available	Up to 199 Minutes per Cycle

Meter Information	
Meter Accuracy Range	.25 - 15 GPM +/- 5%
Meter Capacity Range (gal.)	1 - 60,000

Dimensions	
Distributor Pilot	.8125" or 1.05" Pipe O.D.
Drain Line	1/2" NPTF
Brine Line	1600 - 3/8"
Mounting Base	2-1/2" - 8 NPSM
Height From Top of Tank	7-1/2"

Typical Applications	
Water Softener	6" - 12" Diameter
Iron Filter	6" - 10" Diameter
Sediment Filter	6" - 10" Diameter
Carbon Filter	6" - 10" Diameter
Neutralizing Filter	6" - 10" Diameter

Additional Information	
Injector Brine System	1600
Electrical Rating	24 v, 50 Hz, 60 Hz
Max. VA	8.4
Estimated Shipping Weight	Time Clock: 6 lbs Metered Valve: 7 lbs.
Pressure	Hydrostatic: 300 psi Working: 20 - 125 psi
Temperature	34° - 110° F

Approvals
UL (powerhead only)

UL Recognized Component

Part No. 42749 7/08

Model 7000SXT

High Flow Rate Control Valve

Features

- Up to 35 GPM flows for residential/commercial softening and filtration applications
- Reliable optical electronics eliminate microswitch positioning
- Electronic timer provides quick setup and programming
- Quick connect clips allow easy installation and maintenance
- Regenerates up to 10 cu. ft. softeners
- Integrated turbine meter assembly
- Battery back-up, to keep time-of-day during a power outage

Options

- High-flow bypass valve
- High-flow distribution system
- Plumbing connections in 3/4"-1-1/2" NPT, BSP and Sweat
- Soft water brine refill
- Variable reserve
- Metered with regeneration day override
- Manual operation
- Double backwash
- Environmental cover (NEMA-3R rated)
- Auxiliary switch

Valve Specifications	
Valve material	Fiber-reinforced polymer
Inlet/Outlet	3/4" - 1-1/2" NPT, BSP and Sweat
Cycles	Up to 6 cycles

Flow Rates (50 psi Inlet) - Valve Alone			
Piston	Standard	High Flow	Filter
Continuous	27.7	35.8	36.7
Peak (25 psi drop)	35.5	46.0	47.5
Cv (flow at 1 psi drop)	7.1	9.2	9.5
Max. backwash (25 psi drop)	7.4	15.8	31.3

Regeneration	
Downflow/Upflow	Downflow only
Adjustable cycles	Yes
Time available	199 minutes per cycle

Meter Information	
Meter accuracy	+5/-8% (2 - 40 gpm)
Meter capacity Range (gal.)	1 - 999,900

Dimensions	
Distributor pilot	1.05" or 32 mm
Drain line	3/4" or 1" NPT Quick Connect
Brine line	3/8" or 1/2" Quick Connect
Mounting base	2-1/2" - 8 NPSM
Height from top of tank	7.9"

Typical Applications	
Water softener	8" - 24" diameter
Filters	8" - 24" diameter

Additional Information	
Injector brine system	1610
Electrical rating	24 VAC, 50/60 Hz
Max. VA	15
Estimated shipping weight	11 lbs.
Pressure	Hydrostatic: 300 psi Working: 20 - 125 psi
Temperature	34° - 110° F

Part No. 42802 Rev B

CHARGER

Model 9000

Residential Twin Tank Control Valve

Features

- Fully adjustable 5-cycle control delivers controlled upflow backwash, downflow brining, slow rinse, rapid rinse, timed brine refill and downflow service
- Perfect for light commercial/heavy residential systems that require twin tank conditioning capabilities
- Backwash capacity handles tanks up to 16"
- Choice of 3/4" or 1" meter satisfies a wide range of operational needs
- Salt and water savings by using 100% capacity of the tank in service before switching to the second tank
- Regenerates immediately when needed for continuous soft water
- Regenerates with soft water and keeps system clean for optimum operating efficiency and minimum maintenance
- Innovative second tank quick connection

Options

- Bypass valve (Fiber-reinfored polymer or lead-free brass*)
- Hot water (150°F max., 1" meter only)
- Auxiliary switches
- 3200 mechanical timer, SXT or XT electonic timer
- Cover with window for electonic timers

Valve Specifications			
Valve material	Lead-free brass		
Inlet/Outlet	3/4", 1" or 1-1/4"		
Cycles	5		
Flow Rates (50 psi Inlet) - Valve with meter			
Flow rate	1" meter	3/4" meter	3/4" turbine
Continuous (15 psi drop)	21 GPM	18 GPM	19 GPM
Peak (25 psi drop)	28 GPM	24 GPM	25 GPM
Cv (flow at 1 psi drop)	5.1	4.8	5
Max. backwash (25 psi drop)	8.5 GPM	8.5 GPM	8.5 GPM
Regeneration			
Downflow/Upflow	Downflow only		
Adjustable cycles	Yes		
Time available	SXT: 0-199 minutes per cycle XT: 0-240 minutes per cycle		
Meter Information			
Meter accuracy			
1"	.7 - 40 GPM +/- 5%		
3/4"	.25 - 15 GPM +/- 5%		
Meter capacity range (gal.)			
1"	Standard: 310 - 5,270 Extended: 1,550 - 26,350 SXT: 1 - 999,900 XT: 1,000 - 9,900,000		
3/4"	Standard: 125 - 2,125 Extended: 625 - 10,625 SXT: 1 - 999,900 XT: 1,000 - 9,900,000		
Dimensions			
Distributor pilot	1.05" O.D.		
Drain line	1/2" NPT		
Injector brine system	1600		
Brine line	3/8"		
Mounting base	2-1/2" - 8 NPSM		
Height from top of tank	6-1/2"		
Typical Applications			
Water softener	6" - 16" diameter		
Additional Information			
Electrical rating	24 v, 110 v, 220 v - 50 Hz, 60 Hz		
Estimated shipping weight	3/4" Metered valve: 19 lbs. 1" Metered valve: 23 lbs.		
Pressure	Hydrostatic: 300 psi Working: 20 - 125 psi		
Temperature	34° - 110° F (cold water) 34° - 180° F (hot water)		
Approvals			
NSF Standard 44 Certified	1 - 4 cu. ft.		

* As defined in the U.S. EPA Safe Drinking Water Act product also meets California Proposition 65 Standards

Part No. 40736 Rev A 3/09

Model 9100

Light Commercial/Residential Twin Tank Valve

Features

- Salt and water savings by using 100% capacity of the tank in service before switching to the second tank
- Regenerates immediately when needed for continuous soft water
- Regenerates with soft water and keeps system clean for optimum operating efficiency and minimum maintenance
- Proven technology and performance
- Corrosion-free fiber-reinforced polymer valve body
- Innovative second tank quick connection
- Perfect for light commercial/heavy residential systems that require twin tank conditioning capabilities

Options

- Fiber-reinforced polymer or lead-free brass meter
- Bypass valve (fiber-reinforced polymer or lead-free brass)
- Auxillary switches
- 3200 mechanical timer, SXT, or XT electronic timers
- 32 mm high flow distribution system

Valve Specifications	
Valve material	Fiber-reinforced polymer
Inlet/Outlet	3/4", 1" or 1-1/4"
Cycles	6

Flow Rates (50 psi Inlet) - Valve with Meter			
	3/4" meter	3/4" turbine	1" meter
Continuous (15 psi drop)	18 GPM	19 GPM	21 GPM
Peak (25 psi drop)	24 GPM	25 GPM	28 GPM
Cv (flow at 1 psi drop)	4.8	5	5.1
Max. backwash (25 psi drop)	8.5 GPM	8.5 GPM	8.5 GPM

Regeneration	
Downflow/Upflow	Downflow only
Adjustable cycles	Yes
Time available	3200: 82 or 164 minutes total SXT: 199 minutes per cycle XT: Up to 240 minutes per cycle

Meter Information	
Meter accuracy range	3/4": .25 - 15 GPM +/- 5% 1": .7 - 40 GPM +/- 5%
Meter capacity range (gal.) 3/4"	Standard: 125 - 2,125 Extended: 625 - 10,625 SXT: 1 - 999,900 XT: 1,000 - 9,900,000
1"	Standard: 310 - 5,270 Extended: 1,550 - 26,350 SXT: 1 - 999,900 XT: 1,000 - 9,900,000

Dimensions	
Distributor pilot	1.05" O.D. and 32 mm
Drain line	1/2" NPT
Injector brine system	1600
Brine line	3/8"
Mounting base	2-1/2" - 8 NPSM
Height from top of tank	7-3/10"

Typical Applications	
Water softener	6" - 16" diameter

Additional Information	
Electrical rating	24 v, 110 v, 220 v - 50 Hz, 60 Hz
Estimated shipping weight	Mechanical valve: 14-1/2 lbs. SXT and XT valve: 12 lbs.
Pressure	Hydrostatic: 300 psi Working: 20 - 125 psi
Temperature	34° - 110° F (cold water only)

* As defined in the U.S. EPA Safe Drinking Water Act; the product also meets California Proposition 65 Standards

Part No. 40821 Rev A 3/09

CHARGER

Model 9500

1.5" Twin Tank Control Valve

Features

- Fully adjustable 5-cycle control delivers controlled upflow backwash, downflow brining, slow rinse, rapid rinse, timed brine refill and downflow service
- Easily-adjustable, 5-cycle, downflow-brining control
- Backwash capability handles up to 24" diameter tanks eliminating excessive, space wasting multiple tank installations
- Rugged, long-life construction features a lead-free brass* valve body
- Total flexibility in meter and timer setting
- Satisfies operational needs from 310 to 53,125 gallons
- Uses conditioned water for regeneration
- Salt and water savings by using 100% capacity of the tank in service before switching to the second tank
- Regenerates immediately when needed for continuous soft water
- Regenerates with soft water and keeps system clean for optimum operating efficiency and minimum maintenance

Options

- Bypass valve (Fiber-reinforced polymer or lead-free brass*)
- Hot water (150°F max., 1" meter only)
- Auxiliary switches
- 3200 mechanical timer, SXT or XT electronic timer
- Cover with window for electronic timers

Valve Specifications	
Valve material	Lead-free brass*
Inlet/Outlet	1-1/2" NPTF
Cycles	5

Flow Rates (50 psi Inlet) - Valve Alone	
Continuous (15 psi drop)	38 GPM
Peak (25 psi drop)	49 GPM
Cv (flow at 1 psi drop)	9.8
Max. backwash (25 psi drop)	16 GPM

Regeneration	
Downflow/Upflow	Downflow only
Adjustable cycles	Yes
Time available	Electromechanical: 82 or 164 minutes SXT: 0 - 199 minutes per cycle XT: 240 minutes per cycle

Meter Information	
Meter accuracy	1-1/2 - 75 GPM
Meter capacity range (gal.)	Standard: 625 - 10,625 Extended: 3,125 - 53,125 SXT: 1 - 999 900 XT: 1,000 - 9,900,000

Dimensions	
Distributor pilot	1.5" pipe I.D.
Drain line	1" NPTM
Injector brine system	1/2" & 3/8"
Mounting base	4" - 8 UN
Height from top of tank	7-1/4"

Typical Applications	
Water softener	10" - 24" diameter

Additional Information	
Electrical rating	24 v, 110 v, 200 v - 50 Hz, 60 Hz
Max. VA	8.9
Estimated shipping weight	Metered value: 48 lbs.
Pressure	Hydrostatic: 300 psi Working: 25 - 125 psi
Temperature	34° - 110° F

* As defined in the U.S. EPA Safe Drinking Water Act; the product also meets California Proposition 65 Standards

Part No. 40743 Rev D 7/09

TESTED AND CERTIFIED by the WQA
to NSF/ANSI STD. 61 Section 8
Material Safety Only and ANNEX "G"

255740 | Valve

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
Cabinet Model With 1" Turbulator					
65516TLX	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65524TLX	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65532TLX	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65540TLX	24,000	40,000	9.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Turbulator					
45516TLX	10,000	16,000	8.0	7 x 35	23 x 15 x 43
45524TLX	16,000	24,000	8.0	7 x 44	23 x 15 x 52
45532TLX	20,000	32,000	8.5	8 x 44	24 x 15 x 52
45540TLX	24,000	40,000	9.0	9 x 48	25 x 15 x 56
45548TLX	30,000	48,000	9.5	10 x 44	26 x 15 x 52
45564TLX	40,000	64,000	9.5	10 x 54	26 x 15 x 62
45580TLX	50,000	80,000	11.0	12 x 48	28 x 15 x 56
45596TLX	60,000	96,000	12.0	13 x 54	29 x 15 x 62
Cabinet Model With 1" Standard Distributor					
65516RLX	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65524RLX	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65532RLX	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65540RLX	24,000	40,000	9.5	10 x 35	12 x 21 x 46
2 Tank Model With 1" Standard Distributor					
45516RLX	10,000	16,000	8.0	7 x 44	23 x 15 x 43
45524RLX	16,000	24,000	8.5	8 x 44	24 x 15 x 52
45532RLX	20,000	32,000	9.0	9 x 48	25 x 15 x 56
45540RLX	24,000	40,000	9.5	10 x 44	26 x 15 x 52
45548RLX	30,000	50,000	9.5	10 x 54	26 x 15 x 62
45564RLX	40,000	64,000	11.0	12 x 48	28 x 15 x 56
45580RLX	50,000	80,000	12.0	13 x 54	29 x 15 x 62

Standard Features:

- 255740LX Control Valve
- Brass Pipe Boss
- Polywound Mineral Tank
- 1" Distributor
- High-Capacity Resin
- 15X17" Poly Brine Tank
- Brine Pick-up Tube
- Additional Options Are Available

255760 | Computerized Control

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
Cabinet Model With 1" Turbulator					
65516TMPLX	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65524TMPLX	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65532TMPLX	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65540TMPLX	24,000	40,000	9.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Turbulator					
45516TMPLX	10,000	16,000	8.0	7 x 44	23 x 15 x 43
45524TMPLX	16,000	24,000	8.0	7 x 44	23 x 15 x 52
45532TMPLX	20,000	32,000	8.5	8 x 44	24 x 15 x 52
45540TMPLX	24,000	40,000	9.0	9 x 48	25 x 15 x 56
45548TMPLX	30,000	48,000	9.5	10 x 44	26 x 15 x 52
45564TMPLX	40,000	64,000	9.5	10 x 54	26 x 15 x 62
45580TMPLX	50,000	80,000	11.0	12 x 48	28 x 15 x 56
45596TMPLX	60,000	96,000	12.0	13 x 54	29 x 15 x 6
Cabinet Model With 1" Standard Distributor					
65516RMPLX	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65524RMPLX	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65532RMPLX	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65540RMPLX	24,000	40,000	9.5	10 x 35	12 x 21 x 46
2 Tank Model With 1" Standard Distributor					
45516RMPLX	10,000	16,000	8.0	7 x 44	23 x 15 x 43
45524RMPLX	16,000	24,000	8.5	8 x 44	24 x 15 x 52
45532RMPLX	20,000	32,000	9.0	9 x 48	25 x 15 x 56
45540RMPLX	24,000	40,000	9.5	10 x 44	26 x 15 x 52
45548RMPLX	30,000	50,000	9.5	10 x 54	26 x 15 x 62
45564RMPLX	40,000	64,000	11.0	12 x 48	28 x 15 x 56
45580RMPLX	50,000	80,000	12.0	13 x 54	29 x 15 x 62

Standard Features:

- 255760 Control
- 3/4" Brass Piping Boss
- Polywound Mineral Tank
- 1" Distributor
- High-Capacity Resin
- 15 x 17 x 16" Brine Tank
- Brine Pick-up Tube
- Additional Options Are Available

255460TC | Control

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
Cabinet Model With 1" Turbulator					
65516T	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65524T	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65532T	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65540T	24,000	40,000	9.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Turbulator					
45516T	10,000	16,000	8.0	7 x 44	23 x 15 x 43
45524T	16,000	24,000	8.0	7 x 44	23 x 15 x 52
45532T	20,000	32,000	8.5	8 x 44	24 x 15 x 52
45540T	24,000	40,000	9.0	9 x 48	25 x 15 x 56
45548T	30,000	48,000	9.5	10 x 44	26 x 15 x 52
45564T	40,000	64,000	9.5	10 x 54	26 x 15 x 62
45580T	50,000	80,000	11.0	12 x 48	28 x 15 x 56
45596T	60,000	96,000	12.0	13 x 54	29 x 15 x 62
Cabinet Model With 1" Standard Distributor					
65516R	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65524R	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65532R	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65540R	24,000	40,000	9.5	10 x 35	12 x 21 x 46
2 Tank Model With 1" Standard Distributor					
45516R	10,000	16,000	8.0	7 x 44	23 x 15 x 43
45524R	16,000	24,000	8.5	8 x 44	24 x 15 x 52
45532R	20,000	32,000	9.0	9 x 48	25 x 15 x 56
45540R	24,000	40,000	9.5	10 x 44	26 x 15 x 52
45548R	30,000	50,000	9.5	10 x 54	26 x 15 x 62
45564R	40,000	64,000	11.0	12 x 48	28 x 15 x 56
45580R	50,000	80,000	12.0	13 x 54	29 x 15 x 62

Standard Features:

- 255460TC Control Valve
- Brass Pipe Boss
- Polywound Mineral Tank
- 1" Distributor
- High-Capacity Resin
- 15X17" Poly Brine Tank
- Brine Pick-up Tube
- Additional Options Are Available

Autotrol | 255460i/TC

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
Cabinet Model With 1" Turbulator					
65516TMPi	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65524TMPi	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65532TMPi	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65540TMPi	24,000	40,000	9.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Turbulator					
45516TMPi	10,000	16,000	8.0	7 x 44	23 x 15 x 43
45524TMPi	16,000	24,000	8.0	7 x 44	23 x 15 x 52
45532TMPi	20,000	32,000	8.5	8 x 44	24 x 15 x 52
45540TMPi	24,000	40,000	9.0	9 x 48	25 x 15 x 56
45548TMPi	30,000	48,000	9.5	10 x 44	26 x 15 x 52
45564TMPi	40,000	64,000	9.5	10 x 54	26 x 15 x 62
45580TMPi	50,000	80,000	11.0	12 x 48	28 x 15 x 56
45596TMPi	60,000	96,000	12.0	13 x 54	29 x 15 x 62
Cabinet Model With 1" Standard Distributor					
65516RMPi	10,000	16,000	8.0	7 x 35	13 x 21 x 46
65524RMPi	16,000	24,000	8.5	8 x 35	13 x 21 x 46
65532RMPi	20,000	32,000	9.0	9 x 35	13 x 21 x 46
65540RMPi	24,000	40,000	9.5	10 x 35	12 x 21 x 46
2 Tank Model With 1" Standard Distributor					
45516RMPi	10,000	16,000	8.0	7 x 44	23 x 15 x 43
45524RMPi	16,000	24,000	8.5	8 x 44	24 x 15 x 52
45532RMPi	20,000	32,000	9.0	9 x 48	25 x 15 x 56
45540RMPi	24,000	40,000	9.5	10 x 44	26 x 15 x 52
45548RMPi	30,000	50,000	9.5	10 x 54	26 x 15 x 62
45564RMPi	40,000	64,000	11.0	12 x 48	28 x 15 x 56
45580RMPi	50,000	80,000	12.0	13 x 54	29 x 15 x 62

255460i/TC

Standard Features:

- 255460i/TC Control w/ 3/4" Brass Piping Boss
- Structural Mineral Tank
- 1" Distributor
- High-Capacity Resin
- 15 x 17 x 16" Brine Tank
- Brine Pick-up Tube
- Additional Options Are Available

Performa | 1" Valve With 740 Timer

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
Cabinet Model With 1" Turbulator					
6687416T	10,000	16,000	8.0	7 x 35	13 x 21 x 46
6687424T	16,000	24,000	8.5	8 x 35	13 x 21 x 46
6687432T	20,000	32,000	9.0	9 x 35	13 x 21 x 46
6687440T	24,000	40,000	9.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Turbulator					
4687416T	10,000	16,000	8.0	7 x 44	23 x 15 x 43
4687424T	16,000	24,000	8.0	7 x 44	23 x 15 x 52
4687432T	20,000	32,000	8.5	8 x 44	24 x 15 x 52
4687440T	24,000	40,000	9.0	9 x 48	25 x 15 x 56
4687448T	30,000	48,000	9.5	10 x 44	26 x 15 x 52
4687464T	40,000	64,000	9.5	10 x 54	26 x 15 x 62
4687480T	50,000	80,000	11.0	12 x 48	28 x 15 x 56
4687496T	60,000	96,000	12.0	13 x 54	29 x 15 x 62
Cabinet Model With 1" Standard Distributor					
6687416R	10,000	16,000	8.0	7 x 35	13 x 21 x 46
6687424R	16,000	24,000	8.5	8 x 35	13 x 21 x 46
6687432R	20,000	32,000	9.0	9 x 35	13 x 21 x 46
6687440R	24,000	40,000	9.5	10 x 35	12 x 21 x 46
2 Tank Model With 1" Standard Distributor					
4687416R	10,000	16,000	8.0	7 x 44	23 x 15 x 43
4682744R	16,000	24,000	8.5	8 x 44	24 x 15 x 52
4687432R	20,000	32,000	9.0	9 x 48	25 x 15 x 56
4687440R	24,000	40,000	9.5	10 x 44	26 x 15 x 52
4687448R	30,000	50,000	9.5	10 x 54	26 x 15 x 62
4687464R	40,000	64,000	11.0	12 x 48	28 x 15 x 56
4687480R	50,000	80,000	12.0	13 x 54	29 x 15 x 62

Standard Features:

- 268 1" Valve With 740 Timer
- 1" Copper Inlet/Outlet Fittings
- Polywound Mineral Tank
- 1" Distributor
- High-Capacity Resin
- Brine Pick-up Tube with A/C
- 15 x 17 x 36" Brine Tank

268760 1" Computerized Valve

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
Cabinet Model With 1" Turbulator					
6687616TC	10,000	16,000	9.0	7 x 35	13 x 21 x 46
6687624TC	16,000	24,000	10.0	8 x 35	13 x 21 x 46
6687632TC	20,000	32,000	11.0	9 x 35	13 x 21 x 46
6687640TC	24,000	40,000	12.0	10 x 35	13 x 21 x 46
2 Tank Model With 1" Turbulator					
4687616TC	10,000	16,000	9.0	7 x 44	23 x 15 x 43
4687624TC	16,000	24,000	9.0	7 x 44	23 x 15 x 52
4687632TC	20,000	32,000	10.0	8 x 44	24 x 15 x 52
4687640TC	24,000	40,000	11.0	9 x 48	25 x 15 x 56
4687648TC	30,000	48,000	12.0	10 x 44	26 x 15 x 52
4687664TC	40,000	64,000	12.0	10 x 54	26 x 15 x 62
4687680TC	50,000	80,000	13.0	12 x 48	28 x 15 x 56
4687696TC	60,000	96,000	14.0	13 x 54	29 x 15 x 62
Cabinet Model With 1" Standard Distributor					
6687616RC	10,000	16,000	9.0	7 x 35	13 x 21 x 46
6687624RC	16,000	24,000	10.0	8 x 35	13 x 21 x 46
6687632RC	20,000	32,000	11.0	9 x 35	13 x 21 x 46
6687640RC	24,000	40,000	12.0	10 x 35	12 x 21 x 46
2 Tank Model With 1" Standard Distributor					
4687616RC	10,000	16,000	9.0	7 x 44	23 x 15 x 43
4687624RC	16,000	24,000	10.0	8 x 44	24 x 15 x 52
4687632RC	20,000	32,000	11.0	9 x 48	25 x 15 x 56
4687640RC	24,000	40,000	12.0	10 x 44	26 x 15 x 52
4687648RC	30,000	50,000	12.0	10 x 54	26 x 15 x 62
4687664RC	40,000	64,000	13.0	12 x 48	28 x 15 x 56
4687680RC	50,000	80,000	14.0	13 x 54	29 x 15 x 62

Standard Features:

- 268760 Computerized 1" Control
- 1" Distributor
- Polywound Mineral Tank
- High-Capacity Resin
- 15 x 17 x 36" Brine Tank
- Brine Pick-up Tube W/A.C.

Performa | 1" Valve with 460tc Timer

Standard Features:

- Performa 1" Valve With 460tc Timer
- 1" Copper Inlet/Outlet Fittings
- Polywound Mineral Tank
- 1" Distributor
- High-Capacity Resin
- Brine Pick-up Tube with A/C
- 15 x 17 x 36" Brine Tank

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
Cabinet Model With 1" Turbulator					
66816T	10,000	16,000	8.0	7 x 35	13 x 21 x 46
66824T	16,000	24,000	8.5	8 x 35	13 x 21 x 46
66832T	20,000	32,000	9.0	9 x 35	13 x 21 x 46
66840T	24,000	40,000	9.5	10 x 35	13 x 21 x 46
2 Tank Model With 1" Turbulator					
46816T	10,000	16,000	8.0	7 x 44	23 x 15 x 43
46824T	16,000	24,000	8.0	7 x 44	23 x 15 x 52
46832T	20,000	32,000	8.5	8 x 44	24 x 15 x 52
46840T	24,000	40,000	9.0	9 x 48	25 x 15 x 56
46848T	30,000	48,000	9.5	10 x 44	26 x 15 x 52
46864T	40,000	64,000	9.5	10 x 54	26 x 15 x 62
46880T	50,000	80,000	11.0	12 x 48	28 x 15 x 56
46896T	60,000	96,000	12.0	13 x 54	29 x 15 x 62
Cabinet Model With 1" Standard Distributor					
66816R	10,000	16,000	8.0	7 x 35	13 x 21 x 46
66824R	16,000	24,000	8.5	8 x 35	13 x 21 x 46
66832R	20,000	32,000	9.0	9 x 35	13 x 21 x 46
66840R	24,000	40,000	9.5	10 x 35	12 x 21 x 46
2 Tank Model With 1" Standard Distributor					
46816R	10,000	16,000	8.0	7 x 44	23 x 15 x 43
46824R	16,000	24,000	8.5	8 x 44	24 x 15 x 52
46832R	20,000	32,000	9.0	9 x 48	25 x 15 x 56
46840R	24,000	40,000	9.5	10 x 44	26 x 15 x 52
46848R	30,000	50,000	9.5	10 x 54	26 x 15 x 62
46864R	40,000	64,000	11.0	12 x 48	28 x 15 x 56
46880R	50,000	80,000	12.0	13 x 54	29 x 15 x 62

268460i 1" Performa Computerized Valve

Model	Minimum Grain Capacity	Maximum Grain Capacity	Service Flow Rate	Mineral Tank Size (Inches)	Space Required (Inches)
Cabinet Model With 1" Turbulator					
66816TMPI	10,000	16,000	9.0	7 x 35	13 x 21 x 46
66824TMPI	16,000	24,000	10.0	8 x 35	13 x 21 x 46
66832TMPI	20,000	32,000	11.0	9 x 35	13 x 21 x 46
66840TMPI	24,000	40,000	12 .0	10 x 35	13 x 21 x 46
2 Tank Model With 1" Turbulator					
46816TMPI	10,000	16,000	9.0	7 x 44	23 x 15 x 43
46824TMPI	16,000	24,000	9.0	7 x 44	23 x 15 x 52
46832TMPI	20,000	32,000	10.0	8 x 44	24 x 15 x 52
46840TMPI	24,000	40,000	11.0	9 x 48	25 x 15 x 56
46848TMPI	30,000	48,000	12 .0	10 x 44	26 x 15 x 52
46864TMPI	40,000	64,000	12 .0	10 x 54	26 x 15 x 62
46880TMPI	50,000	80,000	13.0	12 x 48	28 x 15 x 56
46896TMPI	60,000	96,000	14.0	13 x 54	29 x 15 x 62
Cabinet Model With 1" Standard Distributor					
66816RMPI	10,000	16,000	9.0	7 x 35	13 x 21 x 46
66824RMPI	16,000	24,000	10.0	8 x 35	13 x 21 x 46
66832RMPI	20,000	32,000	11.0	9 x 35	13 x 21 x 46
66840RMPI	24,000	40,000	12.0	10 x 35	12 x 21 x 46
2 Tank Model With 1" Standard Distributor					
46816RMPI	10,000	16,000	9.0	7 x 44	23 x 15 x 43
46824RMPI	16,000	24,000	10.0	8 x 44	24 x 15 x 52
46832RMPI	20,000	32,000	11.0	9 x 48	25 x 15 x 56
46840RMPI	24,000	40,000	12.0	10 x 44	26 x 15 x 52
46848RMPI	30,000	50,000	12.0	10 x 54	26 x 15 x 62
46864RMPI	40,000	64,000	13.0	12 x 48	28 x 15 x 56
46880RMPI	50,000	80,000	14.0	13 x 54	29 x 15 x 62

Standard Features:

- 268460i Performa Computerized 1" Control
- 1" Distributor
- Polywound Mineral Tank
- High-Capacity Resin
- 15 x 17 x 36" Brine Tank
- Brine Pick-up Tube

Specifications

Electrical

Controller Operating Voltage	12 Volt – AC (Requires use of Pentair Water®-supplied transformer)
Input Supply Frequency	50 or 60 Hz (Controller configuration dependent)
Motor Input Voltage	12 Volt – AC
Controller System Power Consumption	3 Watts average

Transformer – All Controllers

All Controllers require the use of a Pentair Water-supplied transformer.

Transformer Output Voltage	12 Volt – AC 400mA
Transformer Input Options	115 Volt – AC 50/60 Hz; 230 Volt – AC 50/60 Hz; 100 Volt – AC 50/60 Hz
Transformer Plug Options	Indoor North American Plug Outdoor North American (UL Listed for outdoor use) Japanese Plug Taiwan/Korea Plug Australian Plug United Kingdom Plug Mainland Europe Plug

Additional transformers may be available – call for more information.

Design Specifications/Ratings

Valve Body	Glass-filled thermoplastic – NSF Listed material
Rubber Components	Compounded for cold water – NSF Listed material
Valve Materials Certification	WQA Gold Seal Certified to ORD 0902 and NSF/ANSI 44 Rated component for material safety
Weight (Valve with Control)	5.34 lbs (2.42 kg)
Recommended Operating Pressure Canada	20 - 120 psi (1.38 - 8.27 bar) 20 - 100 psi (1.38 - 6.89 bar)
Hydrostatic Test Pressure	300 psi (20.69 bar)
Water Temperature	35° - 100°F (2° - 38°C)
Ambient Temperature*	35° - 120°F (2° - 48.9°C)

*Recommend use of outdoor cover for direct sunlight applications.

Options

Turbine for Demand Systems	Internal Standard Autotrol® 1-inch (25 mm) turbine
Bypass Valve, Model 1265	Thermoplastic, 1-inch flow path
Bypass Fitting Kits:	
Copper, Sweat Tube Adapter	1-1/4-inches, 1-inch or 3/4 inch (32 mm, 25 mm or 19 mm)
CPVC, Solvent Weld Tube Adapter	1-inch or 3/4-inch (25 mm or 19 mm)
Plastic NPT or BSPT Pipe Adapter	1-inch male or 3/4-inch male (25 mm or 19 mm)
Stainless Steel NPT or BSPT Pipe Adapter	1-inch male or 3/4-inch male (25 mm or 19 mm)
Brine Refill Controls	.14 gpm (.53 Lpm) fixed; .33 gpm (1.25 Lpm) fixed; .74 gpm (2.8 Lpm) fixed; 1.3 gpm (4.92 Lpm) fixed
Compatible with Regenerants/Chemicals	Sodium chloride, potassium chloride, potassium permanganate, sodium bisulfite†, sodium hydroxide†, hydrochloric acid†, chlorine†† and chloramines††

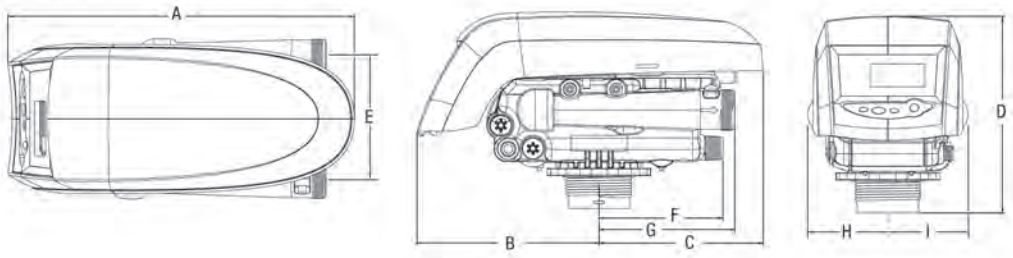
†See owners manual for specific concentrations. ††Valve for use on potable water supply.

Dimensions

Valve Connections

Tank Thread	2-1/2-inches – 8, male
Inlet/Outlet Threads	1-3/4-inches – 12 UNC-2A male
Drain Line	3/4-inch NPT, male
Brine Line	3/8-inch NPT, male
Distributor Tube Diameter	1.050 inches (27 mm)
Distributor Tube Length	1/2 ± 1/2-inches (13 ± 13 mm) above top of tank

Outline Dimensions



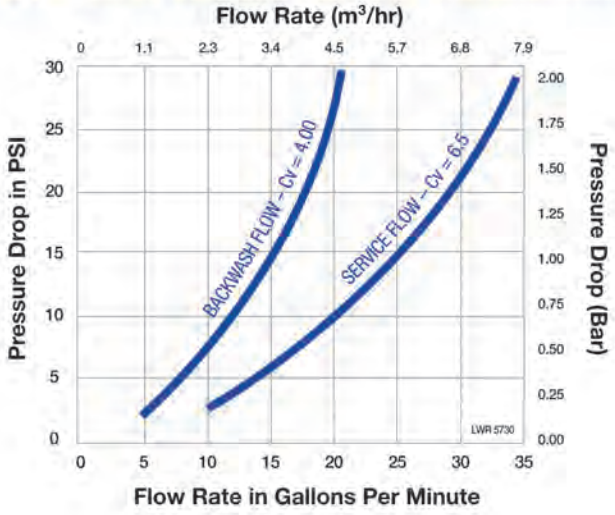
Units	A	B	C	D	E	F	G	H	I
inches	14.9	7.8	7.1	8.5	5.0	5.3	5.8	3.4	3.4
cm	37.8	19.9	17.9	21.5	12.7	13.5	14.8	8.7	8.7

Performance

Flow Rates (Valve Only)

Service @ 15 psi (1.03 bar) drop	25.0 gpm (5.7 m^3/h)
Backwash @ 25 psi (1.72 bar) drop	20.0 gpm (4.5 m^3/h)
Service	Cv = 6.50 (Kv = 5.6)
Backwash	Cv = 4.00 (Kv = 3.5)

Logix™ Series Controller Flow Rate Characteristics



Backwash Flow Control Table

Backwash Number*	Flow Rate (gpm)	Flow Rate (lpm)
7	1.3	4.9
8	1.7	6.4
9	2.2	8.3
10	2.7	10.2
12	3.9	14.76
13	4.5	17.0
14	5.3	20.0

*Backwash flow controls sized for 5.0 gpm/ft^2.

Charger
Water Filters

Charger | Water Filters

Model	Media Type	Media Volume (Cu. Ft.)	Mineral Tank Size	Service Flow Rate
253FA Control Valve				
5FA9GF	Greensand	1.0	9 x 48	5.0
5FA10GF	Greensand	1.5	10 x 54	4.0
5FA9B	Birm	1.0	9 x 48	5.0
5FA10B	Birm	1.5	10 x 54	4.0
5FA9C	Carbon	1.0	9 x 48	5.0
5FA10C	Carbon	1.5	10 x 54	4.0
5FA9CL	Calcite	1.0	9 x 48	5.0
5FA10CL	Calcite	1.5	10 x 54	4.0
5FA9AG	Filter-AG	1.0	9 x 48	4.5
5FA10AG	Filter-AG	1.5	10 x 54	5.5
263 Control Valve				
8FA9GF	Greensand	1.0	9 x 48	4.5
8FA10GF	Greensand	1.5	10 x 54	5.5
8FA9B	Birm	1.0	9 x 48	4.5
8FA10B	Birm	1.5	10 x 54	5.5
8FA9C	Carbon	1.0	9 x 48	4.5
8FA10C	Carbon	1.5	10 x 54	5.5
8FA9CL	Calcite	1.0	9 x 48	4.5
8FA10CL	Calcite	1.5	10 x 54	5.5
8FA9AG	Filter-AG	1.0	9 x 48	4.5
8FA10AG	Filter-AG	1.5	10 x 54	6.0

Standard Features:

- 253 and 263 Control Valve
- 3/4" Brass Boss or 1" Tube Adapters
- Structural Fibers Mineral Tank
- 1" Standard Distibutor
- Media

Pentair/Autotrol

Charger Control Valves	
255460TC	255 5 Cycle, 460TC
255460i	255460i 5 Cycle, 12 Volt with Cord & Voltage Adapter 3/4"
255460TCFA	255 KMn04 application, 460TC
255740	255740 "Logix" Control Valve, 3/4"
255760	255760 " Logix" Computerized Control, 3/4"
268460TC	Performa 1" Softener Valve, 460TC
268460i	Performa 1" Softener valve, 460i Computer, 1"
268460TCFA	Performa 1" Filter Valve, 460TC
263460TC	Performa 1" Filter Valve, 460TC
460TC	460TC series time clock
460i	460i Electronic Demand Timer
K255	255 Upper Module, 3/4"
K7460	155 Upper Module with 460, 3/4"
K546i	Upper Module for 255, 460i Control 3/4"
155CK	255 Conversion Kit (440i To 460i)
268CK	268 Conversion Kit (440i To 460i)
1040277	3/4" NPT Brass Manifold for 255 Control, 3/4"
1040278	1" NPT Brass Manifold for 255 Controls, 1"
1040279	3/4" NPT Noryl Manifold for 255 Control, 3/4"
1040280	1" NPT Noryl Manifold for 255 Control, 1"
256BP	Bypass for 255 Valve, 3/4"
268BP	Bypass for Performa Control Valves, 1"
104-XX	Auxilary Backwash, Specify Required GPM

Charger | Calcite Filters

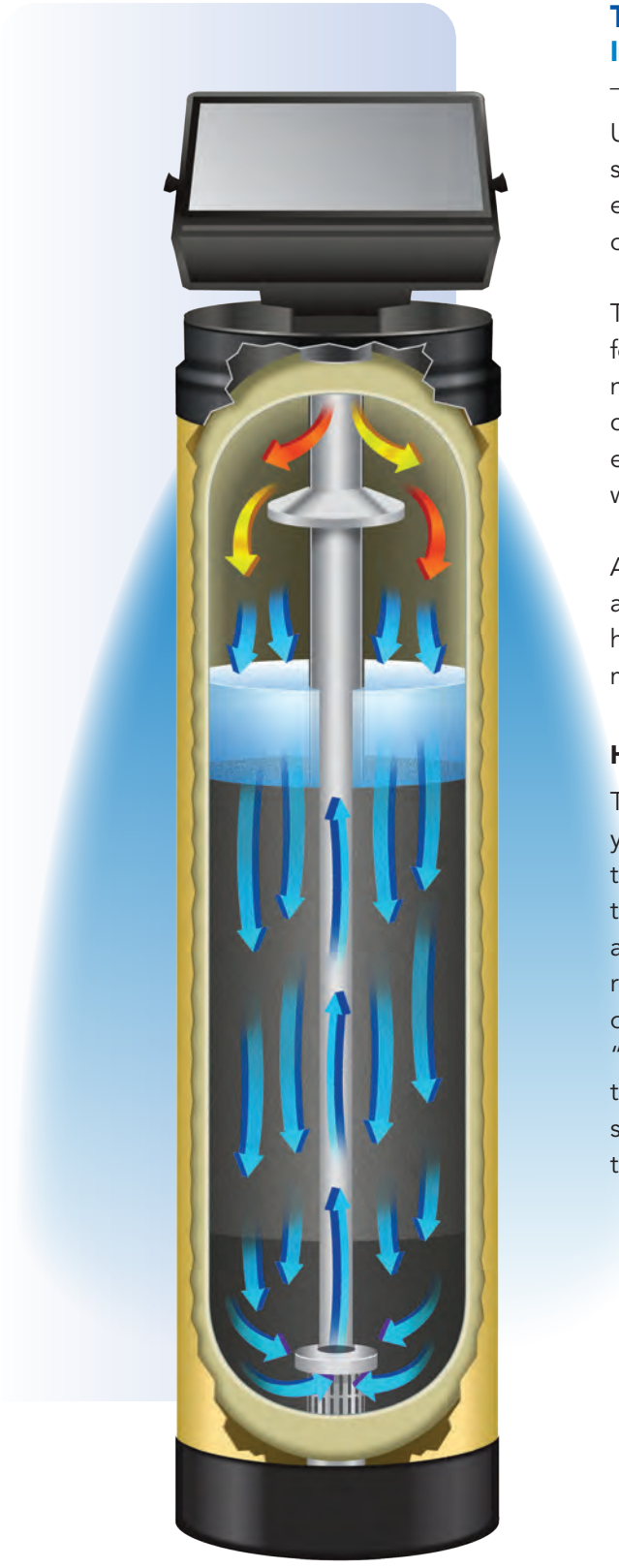
Model	Media CF	Tank Size	Flow Rates:			Pipe Size
			SVC	Peak	BW	
GE 263 1" Control Valve						
3FA12CL	2.0	12 x 48	6	13	7	1"
3FA14CL	3.0	14 x 65	7	13	10	1"
Fleck 2510 3/4" Control Valve						
2512CL	2.0	12 x 48	6	15	7	3/4"
2514CL	3.0	14 x 65	7	15	10	3/4"
Fleck 2750 1" Control Valve						
2712CL	2.0	12 x 48	6	18	7	1"
2714CL	3.0	14 x 65	7	20	10	1"
2716CL	4.0	16 x 65	9	20	12	1"
Fleck 2850 1-1/2" Control Valve						
2814CL	3.0	14 x 65	7	22	7	1-1/2"
2816CL	4.0	16 x 65	9	27	10	1-1/2"
2821CL	6.0	21 x 62	14	31	20	1-1/2"
2824CL	8.0	24 x 71	19	34	30	1-1/2"
Fleck 2900 2" Control Valve						
2914CL	3.0	14 x 65	9	30	7	2"
2916CL	4.0	16 x 65	11	39	10	2"
2921CL	6.0	21 x 62	16	44	20	2"
2924CL	8.0	24 x 71	21	44	30	2"

All Units Include Valve Cover.

Charger | Carbon Filters

Model	Media CF	Tank Size	Flow Rates:			Pipe Size
			SVC	Peak	BW	
GE 263 1" Control Valve						
3FA12C	2.0	12 x 48	6	13	7	1"
3FA14C	3.0	14 x 65	7	13	10	1"
Fleck 2510 3/4" Control Valve						
2512C	2.0	12 x 48	6	15	7	3/4"
2514C	3.0	14 x 65	7	15	10	3/4"
Fleck 2750 1" Control Valve						
2712C	2.0	12 x 48	6	18	7	1"
2714C	3.0	14 x 65	7	20	10	1"
2716C	4.0	16 x 65	9	20	12	1"
Fleck 2850 1-1/2" Control Valve						
2814C	3.0	14 x 65	7	22	7	1-1/2"
2816C	4.0	16 x 65	10	27	10	1-1/2"
2821C	6.0	21 x 62	14	31	20	1-1/2"
2824C	8.0	24 x 71	21	34	30	1-1/2"
Fleck 2900 2" Control Valve						
2914C	3.0	14 x 65	7	30	7	2"
2916C	4.0	16 x 65	10	39	10	2"
2921C	6.0	21 x 62	14	44	20	2"
2924C	8.0	24 x 71	21	44	30	2"

All Units Include Valve Cover.



The Iron Breaker 111
Iron and Sulfur Filter Series

Until recently, the most common solution for problem iron and sulfur water involved the use of harsh chemicals and complicated equipment, requiring regular care and service by the homeowner or water treatment professional.

The Iron Breaker III, by Charger, now offers the "natural" solution for removing iron and sulfur. Its proven, patented technology uses nature's own oxidation process to eliminate iron and sulfur without chemicals, without air compressors, without aerators and without external venturis. Using nature's own oxidation process, leaving you with fresh, clean, odor free water throughout your home.

All of your water-using appliances will lead longer lives. Dishwashers, automatic washers and, of course, your water heater will benefit from having reduced iron and sulfur, which will add years to the life of major appliances and postpone expensive repair and replacement.

How the Iron Breaker III Works:

The Iron Breaker III stores a "bubble" of air, compressed by your well pressure, within the media tank. As your water passes thru the air, the iron or sulfur is converted to a particle, which is then trapped by the catalytic filter media in the tank while the air "bubble" is gradually consumed by the passing water. For regeneration, the unit first "backwashes" itself, removing any iron or sulfur particles it has trapped. The system then replenishes the "air bubble" by drawing in atmosphere, temporarily emptying the tank of all water and transferring oxygen molecules into and on the surface of the media bed where all oxidation occurs. The system then returns to the "service" position, again filtering your water.

Iron Breaker 111 Filters | With Fleck SXT Controls

Model	Capacity	Mineral Tank Size	Filter Media	Service Flow Rate	Backwash Flow Rate
With Fleck 5600 SXT Control					
56FA9IB111	3/4 cu. ft.	9x54	Zeo-Prep	5 to 9	5 GPM
56FA10IB111	1 cu. ft.	10x54	Zeo-Prep	7 to 10	7 GPM
56FA12IB111	1.5 cu. ft.	12x48	Zeo-Prep	9 to 15	10 GPM
56FA13IB111	2 cu. ft.	13x54	Zeo-Prep	11 to 19	12 GPM
With Fleck 2500 SXT Control					
25FA9IB111	3/4 cu. ft.	9x54	Zeo-Prep	5 to 9	5 GPM
25FA10IB111	1 cu. ft.	10x54	Zeo-Prep	7 to 10	7 GPM
25FA12IB111	1.5 cu. ft.	12x48	Zeo-Prep	9 to 15	10 GPM
25FA13IB111	2 cu. ft.	13x54	Zeo-Prep	11 to 19	12 GPM

Optional Medias And Tank Jackets Are Available

Iron Breaker 111 Iron/Sulphur Filters Standard Features:

- Zeo-Prep Filter Media
- 1" Bypass Valve Cover
- Poly Mineral Tank
- 1" Standard Distibutor

The Iron Breaker III Controls The Iron And Sulfur In Your Home:

- **Stops iron stains from occuring**
- **Produces clean, odor-free water**
- **Protects your water softener from iron fouling**
- **Protects plumbing fixtures, appliances and clothing**
- **Protects pipes from iron clogging and black oxidation caused by sulfur**
- **Eliminates the need for chemical-feed treatment systems**
- **Offers solutions for water with high iron and high sulfur content**
- **Features single-system household flow rate to 21 GPM**

EXCLUSIVELY FROM CHARGER Iron Breaker

Charger | Sediment Filters

Model	Media CF	Tank Size	Flow Rates:			Pipe Size
			SVC	Peak	BW	
GE 263 1" Control Valve						
3FA12AG	2.0	12 x 48	9	20	7	1"
3FA14AG	3.0	14 x 65	10	20	10	1"
Fleck 2510 3/4" Control Valve						
2512AG	2.0	12 x 48	6	15	7	3/4"
2514AG	3.0	14 x 65	7	15	10	3/4"
Fleck 2750 1" Control Valve						
2712AG	2.0	12 x 48	6	18	7	1"
2714AG	3.0	14 x 65	7	20	10	1"
2716AG	4.0	16 x 65	9	20	12	1"
Fleck 2850 1-1/2" Control Valve						
2814AG	3.0	14 x 65	7	22	7	1-1/2"
2816AG	4.0	16 x 65	9	27	10	1-1/2"
2821AG	6.0	21 x 62	14	31	20	1-1/2"
2824AG	8.0	24 x 71	19	34	30	1-1/2"
Fleck 2900 2" Control Valve						
2914AG	3.0	14 x 65	9	30	7	2"
2916AG	4.0	16 x 65	11	39	10	2"
2921AG	6.0	21 x 62	16	44	20	2"
2924AG	8.0	24 x 71	21	44	30	2"

All Units Include Valve Cover.

Options For Units With Clack Controls | Optional Accessories

Item
Tank Jackets (7-9")
Tank Jackets (10")
Tank Jackets (12")
Tank Jackets (13")
18 x 33" Brine Tank
18 x 40" Brine tank
11 x 11 x 34" Brine Tank
3.5" Brine Well
4" Brine Well
15 x 17" Salt Grid
18" Round Salt Grid
Upper Distributor Basket
Brine Float Shut-Off Valve
V3006 1" Bypass Valve
V300702 1" Brass Adpt.
V300701 3/4" x 1" PVC El.
V3007 1" PVC Male NPT ADPT.
Carbon Adder, 5 lbs.
S630x Res-Up Resin Cleaner Feeder

Standard Features:

- WS1 Control Valve
- 3/4" Swt. Brass Adpt.
- Polywound Mineral Tank
- Turbulator Or Basket Type Distributor
- 15 x 17 x 36" Poly Brine Tank
- High-Capacity Resin

Clack & Matrix-CD WS1 | 1" HighFlo Timered Valve

Model	Grain Capacity	Mineral Tank	Brine Tank	SVC Flow
Cabinet Models With 1" Turbulator Backwash				
6WS1T16T	16,000	7 x 35	13.5 x 22.5	11.0
6WS1T24T	24,000	8 x 35	13.5 x 22.5	12.0
6WS1T32T	32,000	9 x 35	13.5 x 22.5	13.0
6WS1T40T	40,000	10 x 35	13.5 x 22.5	13.4
Cabinet Models With 1" Standard Distributor				
6WS1T16R	16,000	7 x 35	13.5 x 22.5	11.0
6WS1T24R	24,000	8 x 35	13.5 x 22.5	12.0
6WS1T32R	32,000	9 x 35	13.5 x 22.5	13.0
6WS1T40R	40,000	10 x 35	13.5 x 22.5	13.4
2 Tank Models With 1" Turbulator Backwash				
4WS1T16T	16,000	7 x 44	15 x 17	11.0
4WS1T24T	24,000	7 x 44	15 x 17	11.0
4WS1T32T	32,000	8 x 44	15 x 17	12.0
4WS1T40T	40,000	9 x 48	15 x 17	13.0
4WS1T48T	48,000	10 x 44	15 x 17	13.4
4WS1T64T	64,000	10 x 54	15 x 17	14.6
4WS1T80T	80,000	12 x 48	15 x 17	14.9
2 Tank Models With 1" Standard Distributor				
4WS1T16R	16,000	7 x 44	15 x 17	11.0
4WS1T24R	24,000	8 x 44	15 x 17	11.0
4WS1T32R	32,000	9 x 48	15 x 17	12.0
4WS1T40R	40,000	10 x 44	15 x 17	13.0
4WS1T48R	48,000	10 x 54	15 x 17	14.6
4WS1T64R	64,000	12 x 48	15 x 17	14.9
4WS1T80R	80,000	13 x 54	15 x 17	15.0

Standard Features:

- Polywound Mineral Tank
- High-Capacity Resin
- 15 x 17 x 36" Brine Tank
- Brine Pick-up Tube w/Aircheck
- Windsor Cabinet for Cabinet Models
- WS1 1" Timered Control Valve w/Bypass Valve

(See Unit Options Page For Additional Options)

Clack & Matrix-CD WS1.5 | 1" HighFlo Computerized Valve

Model	Grain Capacity	Mineral Tank	Brine Tank	SVC Flow
Cabinet Models With 1" Turbulator Backwash				
6WS116T	16,000	7 x 35	13.5 x 22.5	11.0
6WS124T	24,000	8 x 35	13.5 x 22.5	12.0
6WS132T	32,000	9 x 35	13.5 x 22.5	13.0
6WS140T	40,000	10 x 35	13.5 x 22.5	13.4
Cabinet Models With 1" Standard Distributor				
6WS116R	16,000	7 x 35	13.5 x 22.5	11.0
6WS124R	24,000	8 x 35	13.5 x 22.5	12.0
6WS132R	32,000	9 x 35	13.5 x 22.5	13.0
6WS140R	40,000	10 x 35	13.5 x 22.5	13.4
2 Tank Models With 1" Turbulator Backwash				
4WS116T	16,000	7 x 44	15 x 17	11.0
4WS124T	24,000	7 x 44	15 x 17	11.0
4WS132T	32,000	8 x 44	15 x 17	12.0
4WS140T	40,000	9 x 48	15 x 17	13.0
4WS148T	48,000	10 x 44	15 x 17	13.4
4WS164T	64,000	10 x 54	15 x 17	14.6
4WS180T	80,000	12 x 48	15 x 17	14.9
2 Tank Models With 1" Standard Distributor				
4WS116R	16,000	7 x 44	15 x 17	11.0
4WS124R	24,000	8 x 44	15 x 17	11.0
4WS132R	32,000	9 x 48	15 x 17	12.0
4WS140R	40,000	10 x 44	15 x 17	13.0
4WS148R	48,000	10 x 54	15 x 17	14.6
4WS164R	64,000	12 x 48	15 x 17	14.9
4WS180R	80,000	13 x 54	15 x 17	15.0

Standard Features:

- WS1 1" Metered-Computer Control Valve
- Bypass Valve
- Polywound Mineral Tank
- High Capacity Resin
  (See Unit Options Page
  For Additional Options)
- 15 x 17 x 36" Brine Tank
- Brine Pick-up Tube w/Aircheck
- Windsor Cabinet For Cabinet Models

Clack WS1
HighFlo
Timered
Valve

Clack WS1 | 1" VT Twin Alternating Control

Model	Grain Capacity	Mineral Tank	Brine Tank	SVC Flow @ 15 PSI Drop
Twin Tank Alternating Modle With Standard Distributor				
CWWS124-TWIN	24,000	2-8 x 44	15 x 17	11.7 GPM
CWWS132-TWIN	32,000	2-9 x 48	15 x 17	13.1 GPM
CWWS140-TWIN	40,000	2-10 x 47	15 x 17	14.6 GPM
CWWS148-TWIN	48,000	2-10 x 54	18 x 23	13.3 GPM
CWWS164-TWIN	64,000	2-12 x 52	18 x 23	16.4 GPM
CWWS180-TWIN	80,000	2-13 x 54	18 x 23	17.1 GPM
CWWS190-TWIN	90,000	2-14 x 65	18 x 40	17.8 GPM

Standard Features:

- Polywound Mineral Tank
- High-Capacity Resin
- 15 x 17 x 36" Brine Tank
- Brine Pick-up Tube w/Aircheck
- Windsor Cabinet for Cabinet Models
- WS1 Twin Alternating Control w/Bypass Valve

(See Unit Options Page For Additional Options)

Clack & Matrix-CD WS1.5 | 1" HighFlo Computerized Valve

Model	Grain Capacity	Mineral Tank	Brine Tank	SVC Flow
Cabinet Models With 1" Turbulator Backwash				
6WS116T	16,000	7 x 35	13.5 x 22.5	11.0
6WS124T	24,000	8 x 35	13.5 x 22.5	12.0
6WS132T	32,000	9 x 35	13.5 x 22.5	13.0
6WS140T	40,000	10 x 35	13.5 x 22.5	13.4
Cabinet Models With 1" Standard Distributor				
6WS116R	16,000	7 x 35	13.5 x 22.5	11.0
6WS124R	24,000	8 x 35	13.5 x 22.5	12.0
6WS132R	32,000	9 x 35	13.5 x 22.5	13.0
6WS140R	40,000	10 x 35	13.5 x 22.5	13.4
2 Tank Models With 1" Turbulator Backwash				
4WS116T	16,000	7 x 44	15 x 17	11.0
4WS124T	24,000	7 x 44	15 x 17	11.0
4WS132T	32,000	8 x 44	15 x 17	12.0
4WS140T	40,000	9 x 48	15 x 17	13.0
4WS148T	48,000	10 x 44	15 x 17	13.4
4WS164T	64,000	10 x 54	15 x 17	14.6
4WS180T	80,000	12 x 48	15 x 17	14.9
2 Tank Models With 1" Standard Distributor				
4WS116R	16,000	7 x 44	15 x 17	11.0
4WS124R	24,000	8 x 44	15 x 17	11.0
4WS132R	32,000	9 x 48	15 x 17	12.0
4WS140R	40,000	10 x 44	15 x 17	13.0
4WS148R	48,000	10 x 54	15 x 17	14.6
4WS164R	64,000	12 x 48	15 x 17	14.9
4WS180R	80,000	13 x 54	15 x 17	15.0

Standard Features:

- WS1 1" Metered-Computer Control Valve
- Bypass Valve
- Polywound Mineral Tank
- High Capacity Resin
  (See Unit Options Page
  For Additional Options)
- 15 x 17 x 36" Brine Tank
- Brine Pick-up Tube w/Aircheck
- Windsor Cabinet For Cabinet Models

Clack & Matrix-CD WS1.5 | 1-1/2" Timered Control

Model	Grain Capacity	Tank Size	Resin CF	Brine Tank	Salt Fill	Flow Rate:		
						SVC	PK	BW
WS1.5 Top Mount Valve with Timered Regeneration								
CTM901.5	90,000	14 x 65	3.0	24 x 41	700	33	44	5
CTM1201.5	120,000	16 x 65	4.0	24 x 41	700	36	50	7
CTM1501.5	150,000	21 x 62	5.0	24 x 41	700	45	61	10
CTM1801.5	180,000	21 x 62	6.0	24 x 50	800	44	60	10
CTM2101.5	210,000	21 x 62	7.0	24 x 50	800	43	58	10
CTM2401.5	240,000	24 x 71	8.0	24 x 50	800	46	62	15
CTM2701.5	270,000	24 x 71	9.0	24 x 50	800	45	61	15
CTM3001.5	300,000	24 x 71	10.0	24 x 50	800	45	60	15
CTM3301.5	330,000	24 x 71	11.0	24 x 50	800	44	59	15
CTM4501.5	450,000	30 x 72	15.0	30 x 48	1200	46	62	25

Service Flow Rates Are Calculated @ 15 psi Pressure Drop. Peak Pressure Rates @ 25 psi Pressure Drop.

Clack & Matrix-CD WS1.5 | 1.5" Metered Control Valve

Model	Grain Capacity	Tank Size	Resin CF	Brine Tank	Salt Fill	Flow Rate:		
						SVC	PK	BW
WS1.5 Top Mount Valve with Metered, Demand Regeneration								
CTM9015M	90,000	14 x 65	3.0	24 x 41	700	33	44	5
CTM12015M	120,000	16 x 65	4.0	24 x 41	700	36	50	7
CTM15015M	150,000	21 x 62	5.0	24 x 41	700	45	61	10
CTM18015M	180,000	21 x 62	6.0	24 x 50	800	44	60	10
CTM21015M	210,000	21 x 62	7.0	24 x 50	800	43	58	10
CTM24015M	240,000	24 x 71	8.0	24 x 50	800	46	62	15
CTM27015M	270,000	24 x 71	9.0	24 x 50	800	45	61	15
CTM30015M	300,000	24 x 71	10.0	24 x 50	800	45	60	15
CTM33015M	330,000	24 x 71	11.0	24 x 50	800	44	59	15
CTM45015M	450,000	30 x 72	15.0	30 x 48	1,200	46	62	25

Service Flow Rates Are Calculated @ 15 psi Pressure Drop. Peak Rates @ 25 psi Pressure Drop.

CHARGER

Clack Control Valves

Charger carries a complete line of Clack Controls and completed treatment systems ranging from small residential applications to full-scale community filtration plants.

WS2L

1" Residential or light commercial control time clock or metered single, twin alternating or parallel. 12V/120V

WS125

1-1/4" Residential or commercial control time clock or metered single, twin alternating or parallel. 12V/120V

WS1 Twin Matrix

1-1/2" Commercial control time clock or metered single, twin alternating or parallel. 12V/120V

WS15

1-1/2" Commercial control time clock or metered single, twin alternating or parallel. 12V/120V

WS2H

2" Heavy commercial control time clock or metered single, twin alternating or parallel. 12V/120V

WS2L

2" Light commercial control time clock or metered single, twin alternating or parallel. 12V/120V

AVAILABLE FROM CHARGER

Premium Drinking Water Cartridges & Systems

Complete Cartridge Range

With Norit Filtrix's technology and Charger Water's Filter Prep brand you can give your customers what they want – safe, healthy water with a wide range of options to meet their specific needs.

Our WaterPurifiers are certified for retention of *viruses and bacteria* according to the WQA Gold Seal for the US EPA Standard for Microbiological Water Purifiers and WQA Gold Seal for NSF P231.

WaterPurifier
- Ultrafiltration (UF) membranes
- Reduces viruses, bacteria and cysts
- WQA Gold Seal for the US EPA Standard for Microbiological Water Purifiers and for NSF P231
- NSF 53

WaterPurifier+

All the benefits of the WaterPurifier plus:
- UF & Activated Carbon (AC) in the same housing
- Chemical contaminant reduction
- Taste and odor improvement
- NSF 42

Round out your product offerings with Norit Filtrix's full line of water filtration media, including microfiltration (MF) membranes and a special grade of activated carbon that reduces heavy metals.

WaterFilter
- Microfiltration membranes
- Reduces bacteria and cysts
- NSF 53

WaterFilter+

All the benefits of the WaterFilter plus:
- MF & AC in the same housing
- Chemical contaminant reduction
- Taste and odor improvement
- NSF 42

WaterConditioner
- Activated carbon block
- Chemical contaminant reduction
- Taste and odor improvement
- NSF 42

WaterConditioner+

All the benefits of the WaterConditioner plus:
- Impregnated AC block
- Heavy metals reduction
- NSF 53

Starter Kits

Under-the-Sink

This drinking water system installs easily under the sink and takes up very little space. The filter operates on normal line pressure and does not generate any wastewater, so no drain is required. The kit includes the drinking water faucet, filter head, mounting hardware, and filter cartridge*.

Countertop

This stylish countertop system attaches to the existing water faucet, allowing water to be diverted through the filter for drinking or cooking needs. The easy-to-install system does not require any tools for installation and comes complete with the countertop unit, divert valve, tubing, and filter cartridge*.

Replacement Cartridges

All of the cartridges shown above fit both systems and are interchangeable. The cartridges can be replaced without turning off the water supply and no tools are required - just a quarter turn. Both versions of the WaterPurifier and WaterFilter cartridges also offer unique failsafe protection that automatically prevents the flow of water when the cartridge expires.

*Available with WaterPurifier, WaterPurifier+, WaterFilter, WaterFilter+, WaterConditioner, or WaterConditioner+ cartridges

2.5 x 10 Inch Cartridges

Provide choice and flexibility for your customers with Norit Filtrix's point-of-use cartridges that are available in two configurations to fit standard 10-inch housings. The FullFlow provides superior service life for bacteria removal with microfiltration membranes. The DuoFlow removes impurities in a two-stage purification process using both microfiltration membranes and activated carbon, combined in one housing, to provide safe drinking water with improved taste and odor.
Coming soon – 2 new configurations – ultrafiltration or ultrafiltration and activated carbon combined.

Norit Filtrix
leading in purification

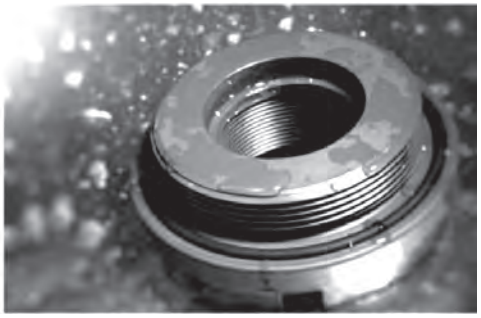
mattson/witt
PRECISION PRODUCTS, INC.

MATTSON/WITT PRECISION PRODUCTS

... your preferred source for standard or custom manufactured plastic component solutions.

Field tested and improved for more than 50 years, our manufactured TOUGH STUFF® components are the industry benchmark for performance and quality. Capable of manufacturing to exacting tolerances in any type of plastic—including PVC, CPVC, Delrin®, Teflon®, PVDF, and Polypropylene—Mattson/Witt is the preferred choice of water treatment industry OEMs for standard and custom:

- Distributor Systems
- Tank Heads
- Distributor Hubs
- Slotted Laterals
- Machined PVC Flow Controllers
- Slotted and Basket Riser Tubes
- Brine Control Valves and Pick-Up Tubes
- Brine Directors
- Static Mixers
- Resin Loaders and Unloaders



Mattson/Witt has the technical resources to help you design parts to meet your custom applications, and the operations team to bring them economically into production. We have earned a reputation the world over for our superior workmanship, and we look forward to exceeding your expectations for service and quality.
Mattson/Witt TOUGH STUFF® products are available through Charger Water Treatment Products.

ISO 9001:2008
REGISTERED FIRM

TOUGH STUFF®

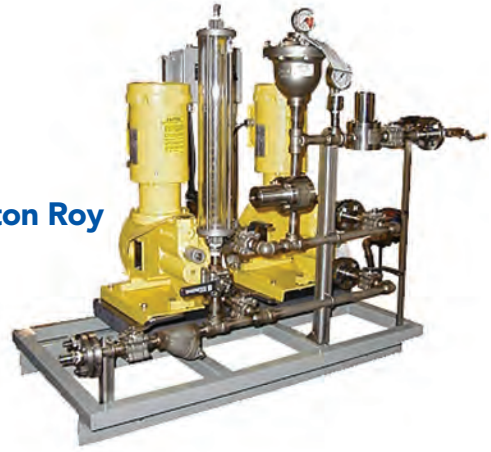
Stenner Pumps

Single Head Adjustable ▲

Pentek

◀ 3G Series Standard Filter Housings *

Milton Roy



Emec

Harmsco®

HUR 8x170FL ▶

Blue-White Ind.

Flex-Pro A4 ▲

Charger carries the complete Harmsco®, Blue-White Ind., Milton Roy, Emec, Stenner Pumps, and Pentek family of liquid filtration products.

Filters, Cartridges and Housings
Residential | Commercial | Industrial | Special Applications

Charger carries a complete line of filter housings and the complete family of PENTEK Filters.

- **10" and 20" Sediment: 5 thru 50 micron**
- **10" and 20" Carbon: GAC thru Carbon Block**
- **Big Blue 10" and 20": 5 thru 50 micron**
- **Big Blue 10" and 20": GAC thru Carbon Block**
- **And all types of Specialty Cartridges**

Whole House Filters Come in a Variety of Sizes and Designs

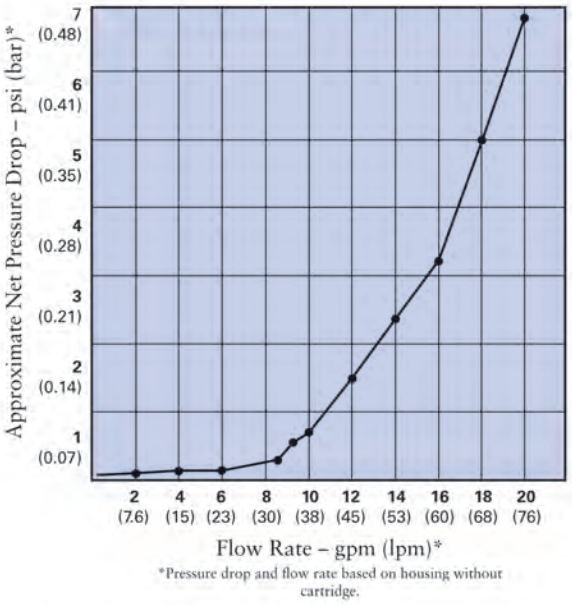
1" 900 Series Sch 80 PVC Machined Head AVCMAN In/Out Head Piped for Bleeder Valve

Clack D1220 Head Complete with By-Pass and Fitting from 3/4" to 1 1/2" in Brass, PVC and Noryl

Rusco Screen Filters
3/4" thru 2"
50 to 500 mesh

3G SERIES

Standard Filter Housings



*Pressure drop and flow rate based on housing without cartridge.

* Shown with differential gauge. Gauges sold seperately.

Housing Specifications and Performance Data

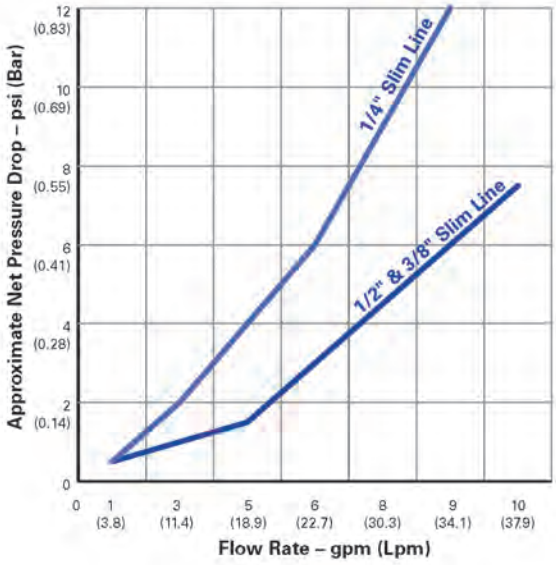
Model	Maximum Dimensions	Initial ΔP (psi) @ Flow Rate (gpm)
3G #10 Blue or Clear MB	12¾" x 5⅛" (324 mm x 137 mm)	1 psi @ 10 gpm (0.07 bar @ 38 Lpm)
3G #10 Blue or Clear MB	13¼" x 5¾" (337 mm x 146 mm)	1 psi @ 10 gpm (0.07 bar @ 38 Lpm)
3G #20 Blue or Clear MB	23" x 5⅜" (597 mm x 137 mm)	1 psi @ 10 gpm (0.07 bar @ 38 Lpm)
3G #20 Blue or Clear IB/MM*	23½" x 5¾" (597 mm x 146 mm)	1 psi @ 10 gpm (0.07 bar @ 38 Lpm)

Materials of Construction

Housing	Polypropylene (Opaque) or Styrene Acrylonitrile (Clear)
Cap	Reinforced Polypropylene
Button Assembly	300-series Stainless Steel, EPDM, and Polypropylene
O-Ring	Buna-N
Maximum Temperature	125°F (51.7°C)
Maximum Pressure	125 psi (8.62 bar)

CAUTION: Protect against freezing to prevent cracking of the filter and water leakage.

SLIM LINE®
Filter Housings



NSF COMPONENT

The 158005, 158006, 158114, 158115, 158120, 158125, 158126, 158128, 158129, 158131, 158149, 158195, 158196, 158204, and 158205 are Tested and Certified by NSF International to NSF/ANSI Standard 42 for material and structural integrity requirements.

Housing Specifications and Performance Data

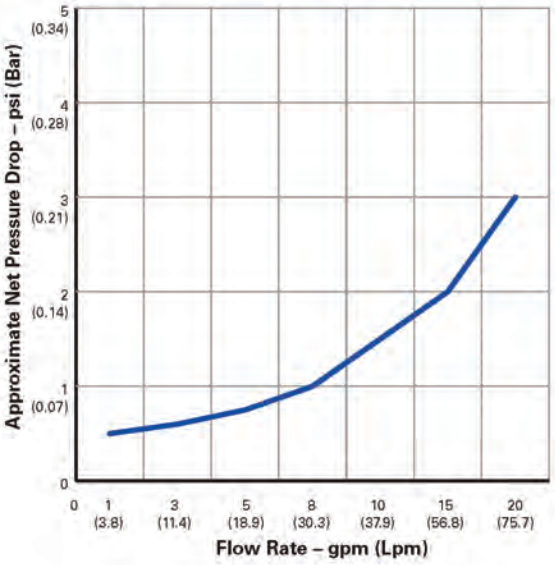
Model	Maximum Dimensions	Initial ΔP (psi) @ Flow Rate (gpm)
#5 Clear	7⅜" x 4½" (187 mm x 118 mm)	1/4" NPT–2 psi @ 3 gpm (0.14 bar @ 11 Lpm)
#10 Clear	12⅛" x 4½" (308 mm x 118 mm)	3/8" NPT–2 psi @ 5 gpm (0.14 bar @ 19 Lpm)
#5 Opaque	7" x 4⅜" (178 mm x 111 mm)	1/4" NPT–2 psi @ 3 gpm (0.14 bar @ 11 Lpm)
#10 Opaque	11¾" x 4⅜" (299 mm x 111 mm)	1/2" NPT–2 psi @ 5 gpm (0.14 bar @ 19 Lpm)
#20 Opaque	21⅞" x 4⅜" (556 mm x 111 mm)	1/2" NPT–2 psi @ 5 gpm (0.14 bar @ 19 Lpm)

Materials of Construction

Housing	SAN (Clear) or Polypropylene (Opaque)
Cap	Reinforced Polypropylene
Button Assembly	300-series Stainless Steel, EPDM, and Polypropylene
O-Ring	Buna-N
Maximum Temperature	125°F (51.7°C)
Maximum Pressure	125 psi (8.62 bar)

CAUTION: Protect against freezing to prevent cracking of the filter and water leakage.

STANDARD
Filter Housings



NSF COMPONENT

The 150001, 150002, 150067, 150068, 150071, 150072, 150435 and 150436 are Tested and Certified by NSF International to NSF/ANSI Standard 42 for material and structural integrity requirements.

Housing Specifications and Performance Data

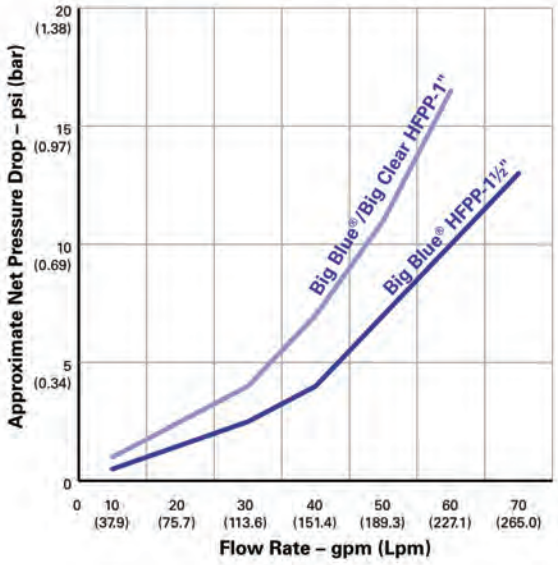
Model	Maximum Dimensions	Initial ΔP (psi) @ Flow Rate (gpm)
#10 Opaque	12¼" x 5¼" (311 mm x 130 mm)	1 psi @ 10 gpm (0.1 bar @ 38 Lpm)
#10 Clear	12⅛" x 5¼" (321 mm x 133 mm)	1 psi @ 10 gpm (0.1 bar @ 38 Lpm)
#20 Opaque	22⅛" x 5⅛" (568 mm x 130 mm)	1 psi @ 10 gpm (0.1 bar @ 38 Lpm)

Materials of Construction

Housing	Polypropylene (Opaque) or Styrene Acrylonitrile (Clear)
Cap	Reinforced Polypropylene
Button Assembly	300-series Stainless Steel, EPDM, and Polypropylene
O-Ring	Buna-N
Maximum Temperature	125°F (51.7°C)
Maximum Pressure	125 psi (8.62 bar)

CAUTION: Protect against freezing to prevent cracking of the filter and water leakage.

BIG BLUE®/BIG CLEAR
Filter Housings



NSF COMPONENT

The 150233, 150234, 150235, 150236, 150237, 150238, 150239, 150240, 150467, 150468, 150469, and 150470 Tested and Certified by NSF International to NSF/ANSI Standard 42 for material and structural integrity requirements.

NOTE: The Big Clear Series of housings are not NSF component listed.

Housing Specifications and Performance Data

Model	Maximum Dimensions	Initial ΔP (psi) @ Flow Rate (gpm)
#10 Big Blue®–3/4"	13⅛" x 7¼" (333 mm x 184 mm)	2 psi @ 15 gpm (0.1 bar @ 57 Lpm)
#10 Big Blue®–1"	13⅛" x 7¼" (333 mm x 184 mm)	1 psi @ 15 gpm (0.1 bar @ 57 Lpm)
#10 Big Blue®–1½"	13⅝" x 7¼" (346 mm x 184 mm)	1 psi @ 20 gpm (0.1 bar @ 76 Lpm)
#20 Big Blue®–3/4"	23⅜" x 7¼" (594 mm x 184 mm)	2 psi @ 15 gpm (0.1 bar @ 57 Lpm)
#20 Big Blue®–1"	23⅜" x 7¼" (594 mm x 184 mm)	1 psi @ 15 gpm (0.1 bar @ 57 Lpm)
#20 Big Blue®–1½"	23⅞" x 7¼" (606 mm x 184 mm)	1 psi @ 20 gpm (0.1 bar @ 76 Lpm)
#10 Big Clear–1"*	13½" x 7⅛" (343 mm x 181 mm)	1 psi @ 15 gpm (0.1 bar @ 57 Lpm)
#20 Big Clear–1"*	23 ¾" x 7⅛" (603 mm x 181 mm)	1 psi @ 15 gpm (0.1 bar @ 57 Lpm)

* Not Performance Tested or Certified by NSF.

Materials of Construction	BIG BLUE®	BIG CLEAR
Housing	Polypropylene	Lexan (#10), Polycarbonate (#20)
Cap	Polypropylene (HFPP)	Polypropylene (HFPP)
Button Assembly	300-series Stainless Steel, EPDM, and Polypropylene	300-series Stainless Steel, EPDM, and Polypropylene
O-Ring	Buna-N	Buna-N
Maximum Temperature	100°F (37.8°C)	100°F (37.8°C)
Maximum Pressure	#10 Big Blue® – 100 psi (6.9 bar) #20 Big Blue® – 90 psi (6.2 bar)	#10 Big Clear – 100 psi (6.9 bar) #20 Big Clear – 90 psi (6.2 bar)

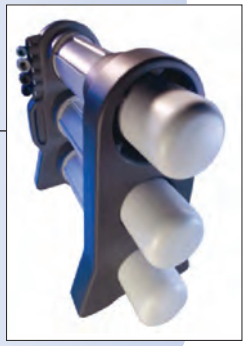
CAUTION: Protect against freezing to prevent cracking of the filter and water leakage.

PC-4

T-200

TFC-435

Merlin®



Reverse Osmosis Systems

- **NSF, CA, WI and IA certified unit with sealed cartridges 35 GPD**
- **Commercial Systems from 1-100 gallons per minute**
- **Complete whole house and process water systems available**
- **35 to 100 gallon per day systems for any budget**
- **750 gallon per day tankless systems without a pump!**

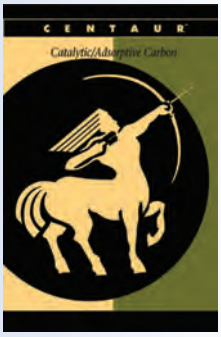
Part Number	Membrane Specifications		
	GPD Throughout	Type	Suggested Application
S1224RS	14	CTA	Americlean
1D1005	18	TFC	Generic
6218122	25	TFC	Generic
S1227RS	25	TFC R/S	Americlean
S1229RS	35	TFC R/S	Americlean
TFC300	50	TFC	Generic
1D1010	100	TCS	RO Ultra
TFC100	100	TFC	Generic
664040	2,100	TFC 4X40	Generic
If the membrane you need is NOT listed - please call for a quote.			

Filtration	Cubic ft./ Shipping Unit	Weight in lbs./ Shipping Unit
Anthracite	1 cu. ft.	56 lbs.
Filter Ag	1 cu. ft.	35 lbs.
Filter Ag Plus	1 cu. ft.	50 lbs.
Filter Sand	1 cu. ft.	100 lbs.
Garnet	3/4 cu. ft.	100 lbs.
ZeoPrep	1 cu. ft.	30 lbs.

Catalytic	Cubic ft./ Shipping unit	Weight in lbs./ Shipping unit
Birm	1 cu. ft.	44 lbs.
Birm Fine Mesh	1 cu. ft.	44 lbs.
Centaur Carbon	1 cu. ft.	33 lbs.
Greensand	1 cu. ft.	85 lbs.
KDF-55	1/3 cu. ft.	57 lbs.
KDF-85	1/3 cu. ft.	57 lbs.
Pyrolox	0.4 cu. ft.	50 lbs.
Pyrolox, Fine Mesh	0.4 cu. ft.	50 lbs.
KDF-85MTM	1 cu. ft.	45-50 lbs.

Carbon	Cubic ft./ Shipping unit	Weight in lbs./ Shipping unit
Coconut	1 cu. ft.	28 lbs.
High Activity	1 cu. ft.	31 lbs.
Centaur Carbon	1 cu. ft.	33 lbs.

Ion Exchange Resin	Cubic ft./ Shipping unit	Weight in lbs./ Shipping unit
C-249 Ionac Cation	1 cu. ft.	52 lbs.
C100E Purolite Cation	1 cu. ft.	52 lbs.
C100EFM Purolite Fine Mesh	1 cu. ft.	53 lbs.
T42NA Thermax Cation	1 cu. ft.	52 lbs.
T240 Thermax Fine Mesh	1 cu. ft.	53 lbs.
CG8FM Fine Mesh	1 cu. ft.	53 lbs.
CGS Resin Tech Cation	1 cu. ft.	51 lbs.
CG10 10% Crosslink Cat	1 cu. ft.	54 lbs.
Nitrate Select Anion	1 cu. ft.	42 lbs.
Tannin Select Anion	1 cu. ft.	41 lbs.
ASM-10-HP Arsenic	1 cu. ft.	43 lbs.
ZeoPrep Clino Zeolite	0.4 ft.	50 lbs.
SBG1 Type 1 Anion	0.4 ft.	44 lbs.



ZeoPrep Filtration Media

"All Natural" Zeolite Filter Media

- Filters down to 5 microns
- Excellent for removing suspended iron, manganese and turbidity
- Removes dissolved iron, hardness and manganese through ion exchange
- Regenerates with salt brine

- Produced by Mother Nature in a crystalline form, ZeoPrep™ filters solids as no other media can.
- ZeoPrep's ion exchange properties make it a dual purpose option for problem water.
- Tested and Approved by the Water Quality Association.

Zeo Prep
Filtration Media

Tank Diameter	Cubic Feet	Service Flow	Backwash
9"	1	5-9	5
10"	1.5	7-10	7
12"	2	9-15	10
14"	3	13-21	15
16"	4	17-28	20
22"	6	30-50	35
24"	8	38-62	40
30"	10	59-98	60
36"	20	85-140	85
42"	30	115-190	110
48"	40	150-250	150

- Cation Exchange Capacity: 1.83 m.e./g
- pH Stability: 3-10
- Specific Surface Area: 1357 $yd^2/oz.$
- Bulk Density: 45-80 $lb./ft.^3$
- Pore Size: 4.0 Δ
- Pore Volume: 15%
- Thermal Stability: 1202° F

CHARGER
Water Treatment Products

Clack Filter-Ag Plus® is a clinoptilolite natural media with a large surface area and microporous structure, which can be used as a highly efficient filter media for the reduction of suspended matter.

Filter-Ag Plus®

ADVANTAGES

- Deep bed filtration results in superior water quality and reduces the load on downstream equipment.
- High sediment removal capacity results in longer filter runs, with a substantial savings in backwash water and time out of service.
- High service flow rates result in lower equipment costs and a savings in space.
- Reduced shipping cost due to lighter weight/cu.ft.
- Replacement of multimedia with Filter-Ag Plus in existing installations may increase filter capacity.
- Filter-Ag Plus is an all-natural, environmentally safe product.

PHYSICAL PROPERTIES

- Color: Light tan to near white
- Dry Bulk Density: 50 lbs/cu.ft
- Specific Gravity: 2.2 g/cc
- Mesh Size: 14x30
- Effective Size: 0.55mm
- Uniformity Coefficient: 1.8
- Hardness: 4-5 (Mohs Scale)

CONDITIONS FOR OPERATION

- Water pH: Wide range
- Max. Water Temp.: 140˚F/60˚C
- Bed Depth: 24-36 inches
- Freeboard: 50% of bed depth
- Backwash Flow Rate: 15-20 gpm/sq.ft.
- Backwash Bed Expansion: 30-40% of bed depth
- Service Flow Rate: 12-20 gpm/sq.ft.
- Local conditions may require lower flow rates
- A gravel support bed is required
- Allow bed to saturate before initial backwash

Clack Filter-Ag Plus is a unique natural ore called clinoptilolite that has many outstanding advantages over common granular filter sands and multimedia used for suspended solids reduction. Viewed under an electron scanning microscope, the granules reveal an angular shape, rough surface and microporous void spaces as small as 3 microns. This creates a surface area over 100 times greater than silica sand. The angularity of the granules and the tapered internal pore spaces allow for reduction of dirt, silt and organic matter suspended in water by bridging, straining and adhesion. The rough surface and internal porosity provide a high surface area for efficient reduction of suspended matter. Utilizing deep bed filtration can typically reduce suspended solids down to the 5 micron or less range. Filter-Ag Plus' structure typically creates less pressure loss through the filter and allows deeper sediment penetration into the bed for higher sediment loading and longer filter runs. The deep bed filtration capacity of Filter-Ag Plus prevents a rapid buildup of head loss and blinding problems that are associated with typical sand filters. The longer filter run times reduce backwash frequency, which provides conservation of water. This ideal combination of particle shape, texture and porosity make it a good choice where quality water filtration and water conservation are important.

Substantial savings can be realized when designing a system using Clack Filter-Ag Plus. Its low pressure drop, high service flow rates and high bed loadings combined with lower backwash frequency allow economy in equipment downsizing and reduced pumping requirements. Its low density also saves on handling expense and shipping costs.

Clack Filter-Ag Plus can be applied to systems designed for either pressure or gravity flow. Because of its unique physical characteristics, Filter-Ag Plus can be used to replace multimedia (graded density) filter designs.

GreensandPlus™ is a black filter media used for removing soluble iron, manganese, and hydrogen sulfide from water supplies.

GreensandPlus™

The manganese dioxide coated surface of GreensandPlus™ promotes the oxidation reaction of iron, manganese, and hydrogen sulfide.

The silica sand core of GreensandPlus allows it to withstand operating conditions in waters that are low in silica, TDS and hardness.

GreensandPlus is effective at higher operating temperatures and higher differential pressures than ordinary Manganese Greensand. Tolerance to higher differential pressure can provide for longer run times between backwashes and a greater margin of safety.

Systems may be designed using either vertical or horizontal pressure filters, as well as open gravity filters.

GreensandPlus is a proven technology for iron, manganese, and hydrogen sulfide removal. There is no need for extensive preconditioning of filter media or lengthy startup periods.

GreensandPlus is an exact replacement for Manganese Greensand. It can be used in Continuous Regeneraton or Intermittent Regeneraion applications and requires no changes in backwash rate, times or chemical feeds.

GreensandPlus is NOT shipped in a regenerated form; therefore it is necessary, prior to use, to regenerate it by contacting the bed for a minimum of 4 hours.

A regeneration level of 4 ounces of $KMn0_4$ or chlorine per cubic foot of GreensandPlus is recommended. Before placing into service, the filter must be rinsed of all remaining traces of potassium permanganate.

GreensandPlus has the WQA Gold Seal Certification for compliance with NSF/ANSI Standard 61.

PHYSICAL PROPERTIES

- Physical Form: Black, nodular granules. Shipped in a dry form.
- Shipping Weight: 85 lbs./cu.ft. gross (1362 kg/m³ gross)
- Specific Gravity: Approximately 2.4
- Porosity: Approximately 0.45
- Screen Grading (dry): 18 x 60 mesh
- Effective Size: 0.30 to 0.35 mm
- Uniformity Coefficient: Less than 1.60
- pH Range: 6.2-8.5
- Maximum Temperature: 100°F/38°C
- Backwash Rate: Minimum 12 gpm/sq.ft. at 55°F (30 m/hr at 13°C)
- Service Flow Rate: 2-5 gpm/sq.ft. (5-12 m/hr)
- Minimum Bed Depth: 24 in. (0.6m) 15 - 18 in. (0.4m-0.45m) of each media for dual media beds

CONDITIONS FOR OPERATION

- Bed Type: Dual media: Anthracite 15-36 in. (0.4-0.9 m) and GreensandPlus 15-24 in. (0.4-0.6 m)
- Capacity: 700-1200 grains of oxidized iron and manganese/sq.ft. of bed area (490-840 g/m²) based on oxidant demand and operation to iron break through.
- Backwash: Suffcient rate using treated water to produce 40% bed expansion.
- Air/Water Scour: Optional using 0.8-2.0 cfm/sq.ft. (15-37 m/hr) with a simultaneous treated water backwash at 4.0-4.5 gpm/sq.ft. (10-11 m/hr).
- Raw Water Rinse: At normal service flow rate for 3-5 minutes or until effluent is acceptable.
- Flow Rate: Recommended flow rates with Continuous Regeneration operation are 2-5 gpm/sq. ft. (5-12 m/hr). Extremely high concentrations of iron and manganese usually require lower flow rates for equivalent run lengths. Higher flow rates can be considered with very low concentrations of iron and manganese. For optimum design parameters, pilot plant testing is recommended. The run length between backwashes can be estimated as follows:

What is the run length for a water containing 1.7 mg/L iron and 0.3 mg/L manganese at a 4 gpm/sq. ft. (10 m/hr) operating rate?

$KMn0_4$ demand
= (1 x mg/L Fe) + (2 x mg/L Mn)
= (1 x 1.7) + (2 x 0.3)
= (2.3 mg/L or 2.3/17.1 = 0.13 grains/gal. (gpg) (2.3 g/m³)

At 1,000 grains/sq. ft. loading: 1000 grain/sq. ft. ÷ 0.13 gpg = 7,692 gal./sq. ft. (313.4 m³/m²

At 4 gpm/sq. ft. (10 m/hr) service rate: 7,692 gal./sq. ft. ÷ 4 gpm/sq. ft. = 1,923 minutes

The backwash frequency is approximately every 30-36 hours of actual operation.

Calcite is a crushed and screened white marble media which can inexpensively be used to neutralize acidic or low pH waters to a neutral, less corrosive effluent.

Calcite

Calcite is a naturally occurring calcium carbonate media. One of the advantages of Calcite is its self-limiting property. When properly applied, it corrects pH only enough to reach a non-corrosive equilibrium. It does not overcorrect under normal conditions. Upon contact with Calcite, acidic waters slowly dissolve the calcium carbonate to raise the pH which reduces the potential leaching of copper, lead and other metals found in typical plumbing systems. Periodic backwashing will prevent packing, reclassify the bed and maintain high service rates. Depending on pH, water chemistry and service flow, the Calcite bed will have to be periodically replenished as the Calcite is depleted.

As the Calcite's calcium carbonate neutralizes the water, it will increase hardness and a softener may become necessary after the neutralizing filter.

Calcite can be effectively combined with Clack Corosex to combine the high flow neutralization properties of Corosex, along with the slower reacting low flow properties of Calcite, increasing the ability to correct low pH.

ADVANTAGES

- Naturally occurring material
- Low uniformity coefficient for maximum contact for controlled pH correction
- Slower reacting for controlled pH correction
- Inexpensive

PHYSICAL PROPERTIES

- Color: Near white
- Bulk Density: 90 lbs./cu. ft.
- Mesh Size: 16 x 40
- Specific Gravity: 2.7
- Effective Size: 0.4 mm
- Uniformity Coefficient: 1.5
- Hardness: 3.0 (Mohs scale)
- Composition: $CaCO_3$, 95% min.
  $MgCO_3$, 3.0% max.

CONDITIONS FOR OPERATION

- A gravel support bed is recommended
- Water pH range: 5.0-7.0
- Bed depth: 24-30 in.
- Freeboard: 50% of bed depth (min.)
- Backwash rate: 8-12 gpm/sq. ft.
- Backwash Bed Expansion: 35% of bed depth
- Service flow rate: 3-6 gpm/sq. ft. but may be modified to adapt to local conditions

Highly spherical shape and uniform grading provide Clack Filter Sand and Gravel with reliable performance. Low soluble impurities limits undesirable mineral leaching into the process stream.

Filter Sand and Gravel

Clack Filter Sand and Gravel are naturally occurring, river washed, glacial deposit products. Their excellent chemical properties - high silica content and low soluble calcium, magnesium and iron compounds - meet AWWA-B100-96 specifications. Precision sizing and uniform grading to close limits meet the rigid specifications of professional engineers throughout the world.

For over 80 years Clack Filter Sand and Gravel have been satisfying the requirements of industrial, municipal and residential users. These products have been specified and used nationally and internationally because of their high quality, desirable chemical properties, color, and wide range of precision sizing.

Processing and regular analysis of production are supervised by registered professional engineers.

Clack Filter Sand is graded specifically for water filtration plants. It can be used in municipal, industrial or residential applications for sediment filtration.

Clack Uncrushed Gravel has a highly spherical shape that promotes good flow and even distribution in support beds. Gravel is low in soluble impurities and it will maintain the quality of the treated water, especially in softeners. Three inch layers are recommended in graded support beds.

ADVANTAGES

- Clack Filter Sand is graded specifically for water filtration plants
- Filter Sand can be used in municipal, industrial or residential applications
- The spherical shape of uncrushed gravel promotes good flow and even distribution

PHYSICAL PROPERTIES

- Color: Light tan to reddish brown
- Density: 100 lbs./cu. ft.
- Mesh Size: 18x35*
- Effective Size: 0.45-0.55 mm*
- Uniformity Coefficient: 1.6 or less*
- Acid Solubility: 0.3-1.6%
- Specific Gravity: 2.65-2.75

CONDITIONS FOR OPERATION

- Bed depth: 18-30 in.
- Freeboard: 20% of bed depth (min.)
- Backwash flow rate: 15-20 gpm/sq. ft.
- Backwash bed expansion: 20% of bed depth
- Service flow rate:
  Municipal: 1.5-2 gpm/sq. ft.
  Industrial: 3 gpm/sq. ft.
  Domestic: 5 gpm/sq. ft.

*All physical properties and conditions for operation are the same for gravel with the exception of mesh size, effective size and uniformity coefficient.

Clack Birm® is a granular filter media commonly used for the reduction of iron and/or manganese from water supplies.

Birm®

ADVANTAGES

- Under the proper conditions, no chemicals to purchase for maintenance. Regeneration not required.
- Iron removal efficiency is extremely high.
- Negligible labor cost: only periodic backwashing required.
- Durable material with a long life and wide temperature range.
- Weighs only 35-40 lbs./cu. ft.

PHYSICAL PROPERTIES

- Color: Black
- Bulk Density: 35-40 lbs./cu. ft.
- Mesh Size: 10 x 40
- Specific Gravity: 2.0 gm/cc
- Effective Size: 0.48 mm
- Uniformity Coefficient: 2.7

CONDITIONS FOR OPERATION

- Alkalinity should be greater than two times the combined sulfate and chloride concentration.
- Maximum water temp: 100ºF/38ºC
- Water pH range: 6.8-9.0
- Dissolved Oxygen (D.O.) content must be equal to at least 15% of the iron (or iron and manganese) content.
- Bed depth: 30-36 in.
- Freeboard: 50% of bed depth (min.)
- Backwash rate: 10-12 gpm/sq. ft.
- Backwash Bed Expansion: 20-40% of bed depth (min.)
- Service flow rate: 3.5-5 gpm/sq. ft. intermittent flow rates and/or favorable local conditions may allow higher flow rates

INFLUENT AND BACKWASH LIMITATIONS

- Free chlorine concentration less than 0.5 ppm
- Hydrogen Sulfide should be removed prior to contact with Birm media
- Oil: None Present
- Polyphosphates: None present

Birm® is an efficient and economical media for the reduction of dissolved iron and manganese compounds from raw water supplies. It may be used in either gravity fed or pressurized water treatment systems. Birm acts as an insoluble catalyst to enhance the reaction between dissolved oxygen (D.O.) and the iron compounds. In ground waters the dissolved iron is usually in the ferrous bicarbonate state due to the excess of free carbon dioxide and is not filterable. Birm, acting as a catalyst between the oxygen and the soluble iron compounds, enhances the oxidation reaction of Fe^{++} to Fe^{+++} and produces ferric hydroxide which precipitates and may be easily filtered. The physical characteristics of Birm provide an excellent filter media which is easily cleaned by backwashing to remove the precipitant. Birm is not consumed in the iron removal operation and therefore offers a tremendous economic advantage over many other iron removal methods.

Other advantages of Birm include; long material life with relatively low attrition loss, a wide temperature performance range and extremely high removal efficiency. Negligible labor costs are involved because Birm does not require chemicals for regeneration, only periodic backwashing is required.

When using Birm for iron removal, it is necessary that the water: contain no oil or hydrogen sulfide, organic matter not to exceed 4-5 ppm, the D.O. content equal at least 15% of the iron content with a pH of 6.8 or more. If the influent water has a pH of less that 6.8, neutralizing additives such as Clack Corosex®, Calcite or soda ash may be used prior to the Birm filter to raise the pH. A water having a low D.O. level may be pretreated by aeration.

Additions of chemicals to influent or backwash water which contacts Birm media may inhibit iron or manganese removal or may break down or coat Birm media. Chlorination greatly reduces Birm's activity. High concentrations of chlorine compounds may deplete the catalytic coating. Polyphosphates are known to coat Birm and reduce Birm's ability to remove iron or manganese. Before adding any chemical to the influent or backwash water, the chemical's compatibility with Birm should be thoroughly tested.

Clack Birm may also be used for manganese reduction with the same dependability as iron removal. In these applications the water to be treated should have a pH of 8.0-9.0 for best results. If the water also contains iron, the pH should be below 8.5. High pH conditions may cause the formulation of colloidal iron which is very difficult to filter out. All other conditions remain the same for either manganese or iron removal.

High Activity Carbon (HAC) may be used for a variety of water treatment applications requiring the reduction of chlorine, tastes, and odors.

High Activated Carbon (HAC)

Clack granular activated carbon is designed for reduction of tastes, odors and dissolved organic chemicals from municipal and industrial water supplies. Manufactured in the United States from select grades of bituminous coal to produce a high density, durable granular product capable of withstanding the abrasion and dynamics associated with repeated hydraulic transport, backwashing and mechanical handling. Activation is carefully controlled to produce exceptionally high internal surface area with optimum pore size for the adsorption of a broad range of high and low molecular weight organic contaminants.

One of the most common applications for Clack High Activity Carbon (HAC) is the reduction of the undesirable tastes and odors present in many chlorinated water supplies. HAC has been successful for many years in the reduction of free chlorine from water supplies. The end product is clean, fresh water with no objectionable taste or odor characteristics.

To obtain maximum efficiency of the activated carbon in the adsorption process, it is desirable to have the greatest possible surface area in the smallest practical volume. This is necessary because the rate of adsorption is proportional to the amount of surface area of the adsorbing medium media. HAC has a surface area of 850 square meters per gram. This results in high efficiency and greater system economy. Clack has for many years provided activated carbon to the OEM and replacement market as a pre-treatment for other water purification systems as well as for use in individual treatment equipment for the removal of specific impurities.

HAC requires periodic backwashing to eliminate accumulated suspended matter and to re-grade the filter bed. HAC has an extremely high capacity but must be replaced when the filter bed loses the capacity for reduction of taste and odor. HAC may be used in either domestic or industrial applications using gravity flow or pressurized filter vessels.

ADVANTAGES

- HAC is an outstanding material for applications requiring taste, odor and dissolved organic chemical removal from water with suspended matter present. This product can be used for filtering waters having a wide range of pH levels.
- Large surface area results in an exceptionally high capacity and efficiency.
- Balanced pore structure gives a more efficient adsorbtion range.
- HAC is very durable so losses due to attrition are kept to a minimum.
- HAC has a very high carbon-low ash content.
- Service rates of 5 gpm/sq. ft. are practical for ordinary taste, odor and chlorine loads.
- HAC will impart a high “polish” to the filtered water.

PHYSICAL PROPERTIES

- Color: Black
- Mesh Size: 10
- Bulk Density: 31 lbs./cu. ft.
- Specific Gravity: 1.4-1.5 gm/cc
- Effective Size: 0.55-0.75 mm, 0.65 typical
- Water Soluble Ash: less than 0.5%
- Iodine #: 850 min., 900 typical
- Abrasion #: 75 min., 81 typical
- Moisture as packed: 2% max., 0.7% typical
- Meets American Water Works Association standard B604-96

CONDITIONS FOR OPERATION

- Water to be filtered should preferably be free of oil and suspended matter
- The water to be filtered should be relatively free of iron and turbidity for maximum service life
- Water pH range: wide range
- Bed depth: 26-30 in.
- Freeboard: 50% of bed depth (min.)
- Service flow rate: 5 gpm/sq. ft.
- Backwash flow rate: 10-12 gpm/sq. ft.
- Backwash bed expansion: 30-40% of bed depth
- Upon installation, backwash to remove carbon fines before placing unit into service

Specifications

	Part No.	Description	Size (Inches)	System Connection	Height w/ Base Inches / mm	Height w/o Base Inches / mm	Capacity Gallons / Liters	Cubic Feet
6" Dia.	30109	0613 PG 2.5"T	06 x 13	2.5" Threaded	13.2 / 335	12.6 / 320	1.1 / 4.2	0.15
	30127	0618 PG 2.5"T	06 x 18	2.5" Threaded	18.6 / 472	18.0 / 457	1.8 / 6.8	0.24
	30151	0635 PG 2.5"T	06 x 35	2.5" Threaded	35.8 / 909	35.2 / 894	3.8 / 14.4	0.51
7" Dia.	30190	0735 PG 2.5"T	07 x 35	2.5" Threaded	35.6 / 904	35.3 / 897	5.2 / 19.7	0.7
	30213	0744 PG 2.5"T	07 x 44	2.5" Threaded	43.7 / 1110	43.4 / 1102	6.7 / 25.4	0.9
8" Dia.	31835	0818 PG 2.5"T	08 x 18	2.5" Threaded	18.8 / 478	18.5 / 470	3.28 / 12.0	0.44
	31836	0830 PG 2.5"T	08 x 30	2.5" Threaded	30.43 / 772	30.13 / 765	5.4 / 2.04	0.72
	30264	0835 PG 2.5"T	08 x 35	2.5" Threaded	35.6 / 904	35.3 / 897	6.6 / 25.0	0.88
	30286	0840 PG 2.5"T	08 x 40	2.5" Threaded	40.2 / 1021	39.9 / 1013	7.8 / 29.5	1.04
	30305	0844 PG 2.5"T	08 x 44	2.5" Threaded	44.4 / 1128	44.1 / 1120	8.7 / 32.9	1.16
9" Dia.	30317	0918 PG 2.5"T	09 x 18	2.5" Threaded	18.6 / 472	18.0 / 457	3.9 / 14.8	0.52
	30347	0935 PG 2.5"T	09 x 35	2.5" Threaded	35.6 / 904	35.3 / 897	8.3 / 31.4	1.11
	30360	0940 PG 2.5"T	09 x 40	2.5" Threaded	40.2 / 1021	39.9 / 1013	9.5 / 31.4	1.27
	30367	0942 PG 2.5"T	09 x 42	2.5" Threaded	42.4 / 1077	42.1 / 1069	10.9 / 41.2	1.46
	30383	0948 PG 2.5"T	09 x 48	2.5" Threaded	48.2 / 1224	47.9 / 1217	11.8 / 44.7	1.58
10" Dia.	30460	1035 PG 2.5"T	10 x 35	2.5" Threaded	35.6 / 904	35.3 / 897	10.2 / 38.6	1.36
	32266	1035 PG 2.5"T 1.25"TDH LOC A	10 x 35	2.5" Threaded 1.25 TDH	35.6 / 904	35.3 / 897	10.2 / 38.6	1.36
	32346	1035 PG 2.5"T 1.25"TDH LOC B	10 x 35	2.5" Threaded 1.25 TDH	35.6 / 904	35.3 / 897	10.2 / 38.6	1.36
	33018	1035 PG 2.5"T 1.25"TDH LOC C	10 x 35	2.5" Threaded 1.25 TDH	35.6 / 904	35.3 / 897	10.2 / 38.6	1.36
	30491	1040 PG 2.5"T	10 x 40	2.5" Threaded	40.3 / 1024	40.1 / 1018	11.5 / 43.5	1.54
	32150	1040 PG 2.5"T 1.25"TDH LOC A	10 x 40	2.5" Threaded 1.25 TDH	40.3 / 1024	40.1 / 1018	11.5 / 43.5	1.54
	32347	1040 PG 2.5"T 1.25"TDH LOC B	10 x 40	2.5" Threaded 1.25 TDH	40.3 / 1024	40.1 / 1018	11.5 / 43.5	1.54
	32992	1040 PG 2.5"T 1.25"TDH LOC C	10 x 40	2.5" Threaded 1.25 TDH	40.3 / 1024	40.1 / 1018	11.5 / 43.5	1.54
	30523	1044 PG 2.5"T	10 x 44	2.5" Threaded	44.6 / 1133	44.4 / 1128	13.1 / 49.6	1.75
	32993	1044 PG 2.5"T 1.25"TDH LOC A	10 x 44	2.5" Threaded 1.25 TDH	44.6 / 1133	44.4 / 1128	13.1 / 49.6	1.75
	32994	1044 PG 2.5"T 1.25"TDH LOC B	10 x 44	2.5" Threaded 1.25 TDH	44.6 / 1133	44.4 / 1128	13.1 / 49.6	1.75
	32995	1044 PG 2.5"T 1.25"TDH LOC C	10 x 44	2.5" Threaded 1.25 TDH	44.6 / 1133	44.4 / 1128	13.1 / 49.6	1.75
	30546	1047 PG 2.5"T	10 x 47	2.5" Threaded	47.4 / 1204	46.9 / 1191	15.1 / 57.0	2.02
	30579	1054 PG 2.5"T	10 x 54	2.5" Threaded	54.8 / 1392	54.6 / 1387	16.4 / 62.0	2.19
	32065	1054 PG 2.5"T 1.25"TDH LOC A	10 x 54	2.5" Threaded 1.25 TDH	54.8 / 1392	54.6 / 1387	16.4 / 62.0	2.19
	32345	1054 PG 2.5"T 1.25"TDH LOC B	10 x 54	2.5" Threaded 1.25 TDH	54.8 / 1392	54.6 / 1387	16.4 / 62.0	2.19
	32997	1054 PG 2.5"T 1.25"TDH LOC C	10 x 54	2.5" Threaded 1.25 TDH	54.8 / 1392	54.6 / 1387	16.4 / 62.0	2.19
12" Dia.	30615	1242 PG 2.5"T	12 x 42	2.5" Threaded	42.8 / 1087	42.2 / 1072	19.1 / 72.0	2.55
	30617	1242 PG 4.5"T (BTRS)	12 x 42	4.5" Threaded (BTRS)	42.8 / 1087	42.2 / 1072	19.1 / 72.0	2.55
	30646	1248 PG 2.5"T	12 x 48	2.5" Threaded	48.8 / 1240	48.4 / 1229	20.6 / 78.0	2.75
	30666	1252 PG 2.5"T	12 x 52	2.5" Threaded	52.9 / 1344	52.4 / 1331	22.2 / 84.0	2.97
	30669	1252 PG 4"T	12 x 52	4.0" Threaded	52.9 / 1344	52.4 / 1331	22.2 / 84.0	2.97
	32127	1252 PG 4.5"T (BTRS) New	12 x 52	4.5" Threaded (BTRS)	52.9 / 1344	52.4 / 1331	22.2 / 84.0	2.97
13" Dia.	30721	1354 PG 2.5"T	13 x 54	2.5" Threaded	54.6 / 1387	53.9 / 1369	27.5 / 104.0	3.68
	30724	1354 PG 4"T	13 x 54	4.0" Threaded	54.6 / 1387	53.9 / 1369	27.5 / 104.0	3.68
	32890	1354 PG 2.5"T 1.25"TDH LOC A	13 x 54	2.5" Threaded 1.25 TDH	54.6 / 1387	53.9 / 1369	27.5 / 104.0	3.68
	32891	1354 PG 2.5"T 1.25"TDH LOC B	13 x 54	2.5" Threaded 1.25 TDH	54.6 / 1387	53.9 / 1369	27.5 / 104.0	3.68
	32892	1354 PG 2.5"T 1.25"TDH LOC C	13 x 54	2.5" Threaded 1.25 TDH	54.6 / 1387	53.9 / 1369	27.5 / 104.0	3.68
14" Dia.	30745	1447 PG 4"T	14 x 47	4.0" Threaded	46.5 / 1181	46.0 / 1168	27.5 / 104.0	3.68
	31389	1447 PG 2.5"T	14 x 47	2.5" Threaded	46.5 / 1181	46.0 / 1168	27.5 / 104.0	3.68
	32006	1447 PG 4.5"T (BTRS) New	14 x 47	4.5" Threaded (BTRS)	46.5 / 1181	46.0 / 1168	27.5 / 104.0	3.68
	30783	1465 PG 2.5"T	14 x 65	2.5" Threaded	64.6 / 1641	64.3 / 1633	40.6 / 154.0	5.43
	30785	1465PG 4"T	14 x 65	4.0" Threaded	64.6 / 1641	64.3 / 1633	40.6 / 154.0	5.43
16" Dia.	30912	1665 PG 4"T	16 x 65	4.0" Threaded	64.6 / 1641	64.3 / 1633	49.0 / 185.0	6.55
	31627	1665 PG 2.5"T	16 x 65	2.5" Threaded	64.6 / 1641	64.3 / 1633	49.0 / 185.0	6.55

Color Options: AL - Almond BL - Blue BK - Black GR - Gray NA - Natural

Part no. 40845 9/05

Specifications

	Part No.	Description	Height w/ base Inches / mm	Height w/o base Inches / mm	Capacity Gallons / Liters	Cubic Feet	Top Open	Bottom Open	Top Side	Bottom Side	Base	Ship Weight
18" Dia.	30948	18 x 65	67.1 / 1704	66.5 / 1689	62.4 / 236	8.3	4"- 8" UN	N/A	N/A	N/A	SMC	67.7
	31343	18 x 65	79.8 / 2027	63.3 / 1608	62.4 / 236	8.3	4"- 8" UN	4"- 8" UN	N/A	N/A	tripod	79.7
	31693	18 x 65	84.4 / 2144	70.0 / 1778	62.4 / 236	8.3	6" FLG	6" FLG	N/A	N/A	tripod	79.7
21" Dia.	30949	21 x 36	41.7 / 1059	38.2 / 970	45.3 / 171	6.1	2.5" NPSM	N/A	N/A	N/A	SMC	46
	30950	21 x 36	41.7 / 1059	38.2 / 970	45.3 / 171	6.1	4"- 8" UN	N/A	N/A	N/A	SMC	46
	31573	21 x 36	54.5 / 1386	38.2 / 970	45.3 / 171	6.1	4"- 8" UN	4"- 8" UN	N/A	N/A	tripod	46
	30953	21 x 62	66.9 / 1699	62.6 / 1590	82.4 / 312	11.0	4"- 8" UN	N/A	N/A	N/A	SMC	90
	30954	21 x 62	79.0 / 2006	62.6 / 1590	82.4 / 312	11.0	4"- 8" UN	4"- 8" UN	N/A	N/A	*tripod	90
24" Dia.	31043	24 x 38	42.0 / 1059	38.5 / 978	61.0 / 231	8.2	4"- 8" UN	N/A	N/A	N/A	SMC	46
	31053	24 x 50	55.6 / 1412	51.5 / 1308	83.5 / 316	11.2	4"- 8" UN	N/A	N/A	N/A	SMC	83.5
	31611	24 x 50	68.4 / 1738	52.9 / 1344	83.5 / 316	11.2	4"- 8" UN	4"- 8" UN	N/A	N/A	*tripod	83.5
	32049	24 x 65	64 / 1626	60.5 / 1537	100 / 378	13.4	4"- 8" UN	N/A	N/A	N/A	SMC	100
	32129	24 x 65	66.5 / 1689	62.6 / 1590	100 / 378	13.4	6" FLG	N/A	N/A	N/A	SMC	100
	32139	24 x 65	79.0 / 2008	65.0 / 1651	100 / 378	13.4	6" FLG	6" FLG	N/A	N/A	tripod	100
	32481	24 x 65	75.7 / 1924	60.0 / 1524	100 / 378	13.4	4"- 8" UN	4"- 8" UN	N/A	N/A	*tripod	100
	31153	24 x 72	74.1 / 1882	70.6 / 1793	119 / 450	15.9	4"- 8" UN	N/A	N/A	N/A	SMC	139
	31154	24 x 72	84.5 / 2147	69.0 / 1753	119 / 450	15.9	4"- 8" UN	4"- 8" UN	N/A	N/A	*tripod	139
	31155	24 x 72	76.8 / 1951	73.3 / 1862	119 / 450	15.9	6" FLG	N/A	N/A	N/A	SMC	149
	31157	24 x 72	87.9 / 2232	74.5 / 1892	119 / 450	15.9	6" FLG	6" FLG	N/A	N/A	tripod	149
30" Dia.	31161	30 x 72	85.9 / 2182	70.2 / 1783	187 / 708	25.0	4"- 8" UN	4"- 8" UN	N/A	N/A	*tripod	234
	31162	30 x 72	80.8 / 2052	73.0 / 1854	187 / 708	25.0	6" FLG	N/A	N/A	N/A	SMC	240
	31163	30 x 72	88.3 / 2242	74.7 / 1897	187 / 708	25.0	6" FLG	6" FLG	N/A	N/A	tripod	240
36" Dia.	31417	36 x 57	70.5 / 1791	60.0 / 1524	205 / 776	27.4	6" FLG	N/A	N/A	N/A	SMC	160
	31418	36 x 57	77.0 / 1956	63.0 / 1600	205 / 776	27.4	6" FLG	6" FLG	N/A	N/A	tripod	160
	31712	36 x 72	89.0 / 2261	75.0 / 1905	264 / 999	35.3	6" FLG	6" FLG	4" FLG	4" FLG	tripod	292
	31214	36 x 72	83.0 / 2108	73.5 / 1867	264 / 999	35.3	6" FLG	N/A	N/A	N/A	SMC	292
	31217	36 x 72	89.0 / 2261	75.0 / 1905	264 / 999	35.3	6" FLG	6" FLG	N/A	N/A	tripod	292
	31523	36 x 72	86.2 / 2190	70.5 / 1791	264 / 999	35.3	4"- 8" UN	4"- 8" UN	N/A	N/A	*tripod	292
42" Dia.	31272	42 x 72	94.5 / 2401	71.0 / 1803	345 / 1306	46.1	6" FLG	N/A	N/A	N/A	tripod	678
	31272	42 x 72	72.0 / 1828	71.0 / 1803	345 / 1306	46.1	6" FLG	N/A	N/A	N/A	short SMC	xxx
	31276	42 x 72	94.6 / 2404	73.0 / 1854	345 / 1306	46.1	6" FLG	6" FLG	N/A	N/A	tripod	678
48" Dia.	31281	48 x 72	91.8 / 2332	76.0 / 1930	463 / 1753	61.9	6" FLG	N/A	N/A	N/A	tripod	780
	31283	48 x 72	96.6 / 2454	80.8 / 2052	463 / 1753	61.9	6" FLG	6" FLG	4" FLG	4" FLG	tripod	780
	31285	48 x 72	92.8 / 2357	77.0 / 1955	463 / 1753	61.9	6" FLG	6" FLG	N/A	N/A	tripod	780
	31432	48 x 72	97.5 / 2477	81.7 / 2075	463 / 1753	61.9	16" MWY	6" FLG	4" FLG	4" FLG	tripod	780
	31647	48 x 72	93.8 / 2383	78.0 / 1981	463 / 1753	61.9	16" MWY	6" FLG	N/A	N/A	tripod	780
63" Dia.	31290	63 x 67	80.3 / 2344	67.8 / 1722	600 / 2271	80.2	16" MWY	6" FLG	N/A	N/A	tripod	900
	31390	63 x 67	79.5 / 2324	67.0 / 1702	600 / 2271	80.2	6" FLG	6" FLG	N/A	N/A	tripod	900
	32008	63 x 67	80.3 / 2344	67.8 / 1722	600 / 2271	80.2	16" MWY	10" FLG	N/A	N/A	tripod	900
	31292	63 x 86	97.0 / 2769	84.5 / 2146	850 / 3218	114	16" MWY	6" FLG	4" FLG	4" FLG	tripod	1425
	31326	63 x 86	96.6 / 2758	84.1 / 2136	850 / 3218	114	6" FLG	6" FLG	N/A	N/A	tripod	1425
	31327	63 x 86	97.0 / 2769	84.5 / 2146	850 / 3218	114	16" MWY	6" FLG	N/A	N/A	tripod	1200
	32253	63 x 86	96.6 / 2758	84.1 / 2136	850 / 3218	114	10" FLG	6" FLG	N/A	N/A	tripod	1200
	32356	63 x 86	97.0 / 2769	84.5 / 2146	850 / 3218	114	16" MWY	10" FLG	N/A	N/A	tripod	1425
	32678	63 x 86	96.6 / 2758	84.1 / 2136	850 / 3218	114	6" FLG	6" FLG	4" FLG	4" FLG	tripod	1425
	31325	63 x 116	128.5 / 3264	116.0 / 2946	1250 / 4732	167	16" MWY	6" FLG	4" FLG	4" FLG	tripod	1775
	32500	63 x 116	128.5 / 3264	116.0 / 2946	1250 / 4732	167	16" MWY	6" FLG	N/A	N/A	tripod	1425
	31456	63 x 144	158.5 / 4026	146.0 / 3708	1600 / 6057	214	16" MWY	6" FLG	N/A	N/A	tripod	2025
	31607	63 x 144	158.5 / 4026	146.0 / 3708	1600 / 6057	214	16" MWY	6" FLG	4" FLG	4" FLG	tripod	2025
	31664	63 x 144	158.5 / 4026	146.0 / 3708	1600 / 6057	214	16" MWY	10" FLG	N/A	N/A	tripod	2025

Color Options: AL - Almond BL - Blue BK - Black GR - Gray NA - Natural

*Measurements are subject to change without notice and are for reference only.

NOTE: Flexible connections must be installed between hard piping and tank openings. Failure to install flex connection properly with the vessel will void the warranty.

Part no. 40846 9/05

Composite Vessels – Specifications

Fleck Valve	Tank Dia. Inches / mm	Adder Ht. (X) Inches / mm
2750	18 / 457	6.5 / 165
2850	21 / 533	6.5 / 165
2900	24, 30 / 610, 762	12 / 305
3150	42 / 1067	10 / 254
3900	48-63 / 1219-1600	15 /381

Installation Tips:
- Bolt base to floor
- Calculate height for valve and base combined (see photo)

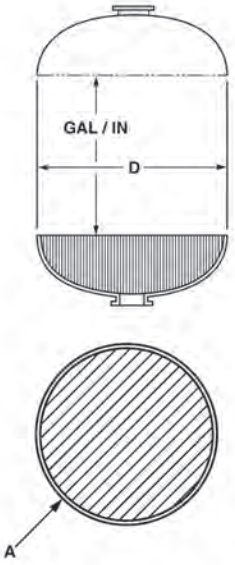
Color Options: AL - Almond BL - Blue BK - Black GR - Gray NA - Natural

*Measurements are subject to change without notice and are for reference only.

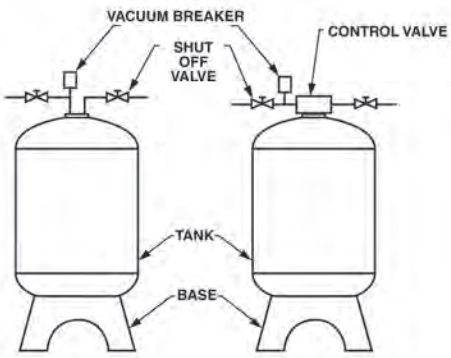
Dome Volume (gallons) and Straight Wall Gallon per Inch

D (inches)	Nominal Diameter Gallons* (One Dome)	Gallon / Inch (Approx.)	A (Sq. Feet)
12	1.0	0.5	0.7
13	1.4	0.5	0.9
14	1.7	0.6	1.1
16	2.7	0.8	1.3
18	3.7	1.0	1.8
21	6.2	1.4	2.4
24	9.3	1.9	3.0
30	18	2.9	4.6
36	33	4.2	6.7
42	52	5.7	9.0
48	74	7.5	12.0
63	168	13.0	20.0

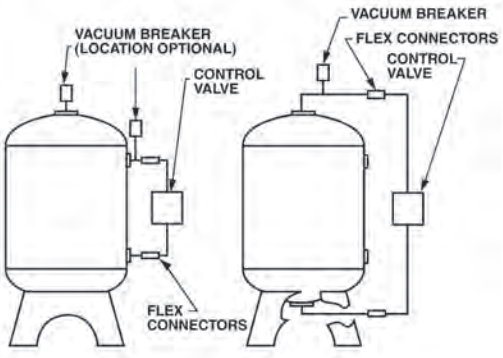
*Cubic Ft. = 0.1337 x Gallons



Vacuum Breaker Installation



Flex Connectors Installation



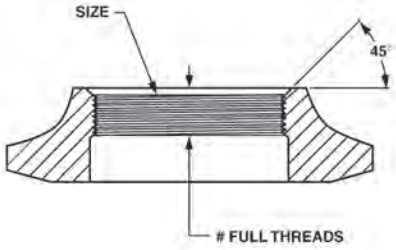
NOTE: Flexible connectors must be installed between hard piping and tank openings. These pressure vessels are rated for an internal negative pressure of 5ŷ HG (17 Pa) vacuum below atmospheric. If negative pressure could ever exceed 5ŷ Hg (17 Pa), an adequate vacuum breaker must also be properly installed. Failure to install flex connection properly, or improper installation of a vacuum breaker when required, may void the warranty.

Part no. 40846 9/05

Composite Vessels – Specifications

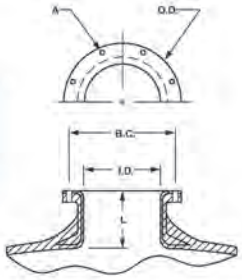
Top and Bottom Opening Threads

Size	Composite/ Polyglass	Number of Full Threads	Composite
2.5"-8" NPSM	6	3 min	6
4"-8" UN	7	3 min	7
4.5"-8" Buttress	7	3 min	7



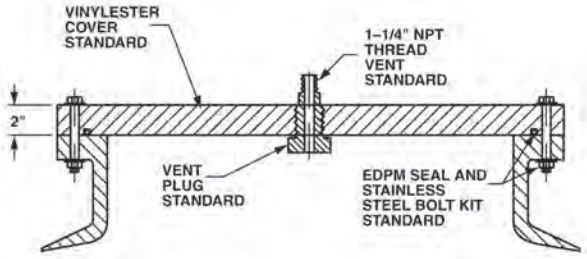
Top and Bottom Opening Flanges/Manway

Size	L	I.D.	B.C.	O.D.	A Bolt Dia.	Number of Holes	Weight (lbs.)
6" SNA	3.6"	5.9"	8.5"	9.4"	0.31"	12	5.8
10" ANSI	3.7"	10.0"	14.3"	16.0"	0.88"	12	17.8
16" Manway SNA	4.3"	16.0"	20.4"	21.3"	0.50"	24	34.0



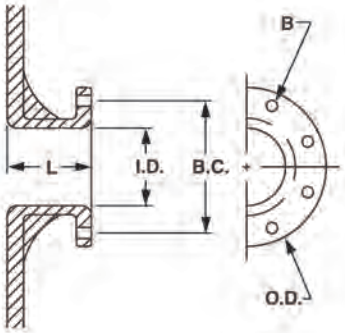
Manway Cover

Material	Pressure Rating	Tapping
CPVC	100 psi	As requested
VE	150 psi	As shown only



Side Flange

Size	L	I.D.	B.C.	O.D.	B Bolt Dia.	Number of Holes	Weight (lbs.)
4" ANSI	4.1"	4.0"	7.5"	9.0"	0.63"	8	6.4



Part no. 40846 9/05

COMPOSITE PRESSURE VESSELS

SPECIFICATIONS

DESCRIPTION	OPENING	OPERATING PRESSURE (PSI/BAR)	HEIGHT W/ BASE (IN/MM) [1]	HEIGHT W/O BASE (IN/MM) [1]	DIAMETER (IN/MM) [2]	CAPACITY (GAL/LITER)	BASE	WEIGHT W/ BASE (LBS/KG) [3]
18 x 65	4"T	150/10.34	66.25/1682.0	65.00/1651.0	18.65/473.8	64/242.0	SMC	67/30.4
18 x 65	4"TB	150/10.34	73.13/1857.5	65.63/1667.0	18.65/473.8	64/242.0	SMC EXT	67/30.4
21 x 62	4"T	150/10.34	67.13/1705.0	63.50/1612.9	22.00/558.8	84/318.0	SMC	95/43.1
21 x 62	4"TB	150/10.34	72.75/1847.9	63.50/1612.9	21.75/552.5	84/318.0	SMC EXT	95/43.1
24 x 72	4"T	150/10.34	74.66/1896.3	70.60/1793.2	24.25/616.0	118/446.7	SMC	109/49.4
24 x 72	4"TB	150/10.34	80.42/2042.7	70.30/1785.6	24.60/624.8	119/450.5	SMC EXT	124/56.2
24 x 72	6"TBF	150/10.34	88.50/2247.9	74.50/1892.3	24.20/614.7	119/450.5	TRIPOD	137/62.1
30 x 60	6"TF	150/10.34	71.63/1819.4	64.34/1634.2	30.20/767.0	151/571.6	SMC EXT	185/83.9
30 x 60	6"TBF	150/10.34	82.50/2095.5	68.50/1739.9	30.20/767.0	151/571.6	TRIPOD	185/83.9
30 x 72	4"TB	150/10.34	78.90/2004.1	70.40/1788.2	30.07/763.8	187/707.9	SMC EXT	198/89.8
30 x 72	6"TBF	150/10.34	88.90/2258.1	74.90/1902.5	30.20/767.1	187/707.9	TRIPOD	211/95.7
36 x 72	4"TB	150/10.34	80.50/2004.7	70.50/1790.7	36.00/914.4	264/999.3	SMC EXT	285/129.3
36 x 72	6"TBF	150/10.34	90.39/2295.9	76.14/1933.9	36.12/917.4	264/999.3	TRIPOD	285/129.3
42 x 72	6"TF	150/10.34	72.52/1842.0	71.14/1807.0	42.25/1073.2	345/1306.0	SMC LOW	370/168.0
42 x 72	6"TBF	150/10.34	90.12/2289.0	73.00/1854.2	42.25/1073.2	345/1306.0	TRIPOD	400/181.0
48 x 72	6"TF	150/10.34	81.54/2071.2	75.16/1909.1	48.25/1225.6	463/1753.0	SMC LOW	494/224.0
48 x 72	6"TBF	150/10.34	92.90/2359.7	76.90/1953.3	48.25/1225.6	463/1753.0	TRIPOD	494/224.0
63 x 67	6"TBF	150/10.34	81.41/2067.8	67.10/1704.3	64.00/1625.7	600/2271.0	TRIPOD	680/308.0
63 x 67	16"TMY, 6"BF	150/10.34	82.24/2088.9	67.80/1722.1	64.00/1625.7	600/2271.0	TRIPOD	680/308.0
63 x 86	6"TBF	150/10.34	98.54/2502.9	84.10/2136.1	64.00/1625.7	900/3407.0	TRIPOD	950/431.0
63 x 86	16"TMY, 6"BF	150/10.34	98.94/2513.1	84.50/2146.3	64.00/1625.7	900/3407.0	TRIPOD	950/431.0
63 x 116	16"TMY, 6"BF	150/10.34	130.44/3313.2	116.00/2946.4	64.00/1625.7	1250/4732.0	TRIPOD	1190/540.0
63 x 144	16"TMY, 6"BF	150/10.34	160.18/4068.6	145.50/3695.7	64.50/1638.3	1600/6057.0	TRIPOD	1398/634.0

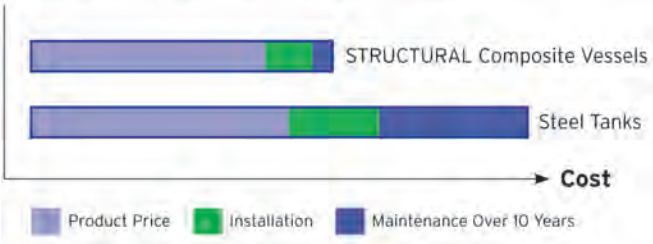
[1] Height Tolerance is +/- 1.00in/ 25.4 mm
[2] Diameter Tolerence is +/- .50in/ 12.7 mm
[3] Product Weight - Contact customer service for shipping weight

Note: ASME Code available on flanged tanks 18" to 48" in diameter

COMPOSITE VESSEL BENEFITS OVER STEEL TANKS

Steel Tanks	STRUCTURAL Composite Vessels
Very heavy and difficult to handle thus involves higher labor cost to install	60% lighter than steel and easier to handle thus lower installation costs
Corrode and rust over a period of time	Corrosion-resistant both inside and out
Lining has to be periodically treated	Low maintenance
Painting and coating have to be undertaken regularly	Natural fiberglass shell never fades or changes color; colored shells recommended for UV protection

COMPOSITE VESSELS: LOWER TOTAL OPERATION COSTS VERSUS STEEL TANKS



Specifications

	Size (Inches)	Tank Height C1 (In./mm)	Overall Height L1 Std. Base (In./mm)	L2 Ext. Base (In./mm)	Capacity Gallons / Liters	Cubic Feet	Tank Diameter A (In./mm)	D (In./mm)	H1 (In./mm)	H2 (In./mm)
6" Dia.	6 x 13	16.0 / 152	12.8 / 325	18.7 / 475	1.6 / 6.1	0.2	6.0 / 152	6.0 / 152	3.1 / 79	3.5 / 89
	6 x 18	18.0 / 457	18.1 / 460	24.0 / 610	2.3 / 8.7	0.3	6.0 / 152	9.4 / 239	4.1 / 104	4.5 / 114
	6 x 32	32.0 / 813	32.2 / 818	38.1 / 968	3.8 / 14.4	0.5	6.0 / 152	23.4 / 594	4.1 / 104	4.5 / 114
	6 x 35	35.0 / 889	35.1 / 892	41.0 / 1041	4.4 / 16.7	0.6	6.0 / 152	26.4 / 671	4.1 / 104	4.5 / 114
7" Dia.	7 x 22	22.0 / 559	22.2 / 564	28.0 / 711	3.5 / 13.3	0.5	7.0 / 178	13.1 / 333	4.9 / 124	4.1 / 104
	7 x 24	24.0 / 610	24.1 / 612	30.0 / 762	3.8 / 14.4	0.5	7.0 / 178	15.1 / 384	4.9 / 124	4.1 / 104
	7 x 30	30.0 / 762	30.2 / 767	36.0 / 914	4.8 / 18.2	0.6	7.0 / 178	21.1 / 536	4.9 / 124	4.1 / 104
	7 x 35	35.0 / 889	35.1 / 892	40.9 / 1039	5.7 / 21.6	0.8	7.0 / 178	26.0 / 660	4.9 / 124	4.1 / 104
	7 x 40	40.0 / 1016	40.2 / 1021	46.0 / 1168	6.6 / 25.0	0.9	7.0 / 178	31.1 / 790	4.9 / 124	4.1 / 104
	7 x 44	44.0 / 1118	44.4 / 1128	50.2 / 1275	7.3 / 27.6	1.0	7.0 / 178	35.3 / 897	4.9 / 124	4.1 / 104
8" Dia.	8 x 17	17.0 / 432	17.2 / 437	23.0 / 584	3.1 / 11.7	0.4	8.0 / 203	7.2 / 183	5.3 / 135	4.4 / 112
	8 x 22	22.0 / 559	22.8 / 559	28.6 / 726	4.3 / 16.3	0.6	8.0 / 203	12.8 / 325	5.3 / 135	4.4 / 112
	8 x 24	24.0 / 610	24.3 / 617	30.1 / 765	4.6 / 17.4	0.6	8.0 / 203	14.3 / 363	5.3 / 135	4.4 / 112
	8 x 30	30.0 / 762	30.2 / 767	36.0 / 914	6.0 / 22.7	0.8	8.0 / 203	20.2 / 513	5.3 / 135	4.4 / 112
	8 x 35	35.0 / 889	35.2 / 894	41.0 / 1041	7.1 / 26.9	0.9	8.0 / 203	25.2 / 640	5.3 / 135	4.4 / 112
	8 x 36	36.0 / 914	36.2 / 914	42.0 / 1067	7.3 / 27.6	1.0	8.0 / 203	26.2 / 665	5.3 / 135	4.4 / 112
	8 x 40	40.0 / 1016	40.3 / 1024	46.1 / 1171	8.2 / 31.0	1.1	8.0 / 203	30.3 / 770	5.3 / 135	4.4 / 112
	8 x 44	44.0 / 1118	44.5 / 1130	50.2 / 1275	9.1 / 34.4	1.2	8.0 / 203	34.4 / 874	5.3 / 135	4.4 / 112
9" Dia.	9 x 35	35.0 / 889	35.3 / 897	41.0 / 1041	8.8 / 33.3	1.2	9.0 / 229	24.5 / 622	5.3 / 135	5.2 / 132
	9 x 40	40.0 / 1016	40.3 / 1024	46.0 / 1168	10.3 / 39.0	1.4	9.0 / 229	29.5 / 749	5.3 / 135	5.2 / 132
	9 x 48	48.0 / 1219	48.3 / 1227	54.0 / 1372	12.5 / 47.3	1.7	9.0 / 229	37.5 / 953	5.3 / 135	5.2 / 132
10" Dia.	10 x 19	19.0 / 483	19.3 / 490	24.8 / 630	45.1 / 19.3	0.7	10.0 / 254	8.0 / 203	5.8 / 147	5.2 / 132
	10 x 30	30.0 / 762	30.4 / 772	36.0 / 914	8.5 / 32.3	1.1	10.0 / 254	19.3 / 490	5.8 / 147	5.2 / 132
	10 x 35	35.0 / 889	35.2 / 894	40.7 / 1034	10.4 / 39.4	1.4	10.0 / 254	23.8 / 605	5.9 / 150	5.2 / 132
	10 x 40	40.0 / 1016	40.3 / 1024	45.8 / 1163	12.1 / 45.8	1.6	10.0 / 254	28.9 / 734	5.9 / 150	5.2 / 132
	10 x 42	42.0 / 1067	42.3 / 1074	47.8 / 1214	12.7 / 48.1	1.7	10.0 / 254	31.0 / 787	5.8 / 147	5.2 / 132
	10 x 44	44.0 / 1118	44.3 / 1125	49.9 / 1267	13.4 / 51.0	1.8	10.0 / 254	33.1 / 841	5.8 / 147	5.2 / 132
	10 x 47	47.0 / 1194	47.3 / 1201	52.8 / 1341	14.4 / 55.0	1.9	10.0 / 254	36.0 / 914	5.8 / 147	5.2 / 132
	10 x 54	54.0 / 1372	54.3 / 1379	59.8 / 1519	16.7 / 63.0	2.2	10.0 / 254	43.0 / 1092	5.8 / 147	5.2 / 132
12" Dia.	12 x 29	29.0 / 737	29.1 / 739	34.2 / 869	14.2 / 53.7	1.9	12.0 / 305	15.4 / 391	6.6 / 168	6.4 / 163
	12 x 38	38.0 / 965	39.0 / 991	43.9 / 1115	18.8 / 71.2	2.5	12.0 / 305	25.1 / 638	6.6 / 168	6.4 / 163
	12 x 48	48.0 / 1219	48.9 / 1242	53.8 / 1367	23.4 / 89.0	3.1	12.0 / 305	35.0 / 889	6.6 / 168	6.4 / 163
13"	13 x 54	54.0 / 1372	54.9 / 1394	59.8 / 1519	27.6 / 105.0	3.7	13.0 / 330	35.6 / 904	9.1 / 231	9.3 / 236
14"	14 x 65	65.0 / 1651	65.7 / 1669	70.5 / 1791	39.7 / 150.3	5.3	14.0 / 356	43.0 / 1092	10.8 / 274	11.1 / 282
16" Dia.	16 x 23	23.0 / 584	24.7 / 627	28.8 / 732	14.5 / 55.0	1.9	16.0 / 406	See Factory	11.6 / 295	13.4 / 340
	16 x 33	33.0 / 838	34.6 / 879	38.8 / 966	22.4 / 56.0	3.0	16.0 / 406	9.7 / 246	11.6 / 295	13.4 / 340
	16 x 45	45.0 / 1143	46.5 / 1181	50.6 / 1285	31.7 / 120.0	4.2	16.0 / 406	21.6 / 549	11.6 / 295	13.4 / 340
	16 x 58	58.0 / 1473	59.6 / 1514	63.7 / 1618	42.0 / 159.0	5.6	16.0 / 406	34.6 / 878	11.6 / 295	13.4 / 340
	16 x 65	65.0 / 1651	65.9 / 1674	71.1 / 1806	48.3 / 182.8	6.4	16.0 / 406	41.7 / 1059	11.5 / 292	13.4 / 340

Color Options: BL - Blue BK - Black NA - Natural

2-½" - 8 x 1" or ¾" Swivel Elbow Assembly

D1287

D1288

D1225-09

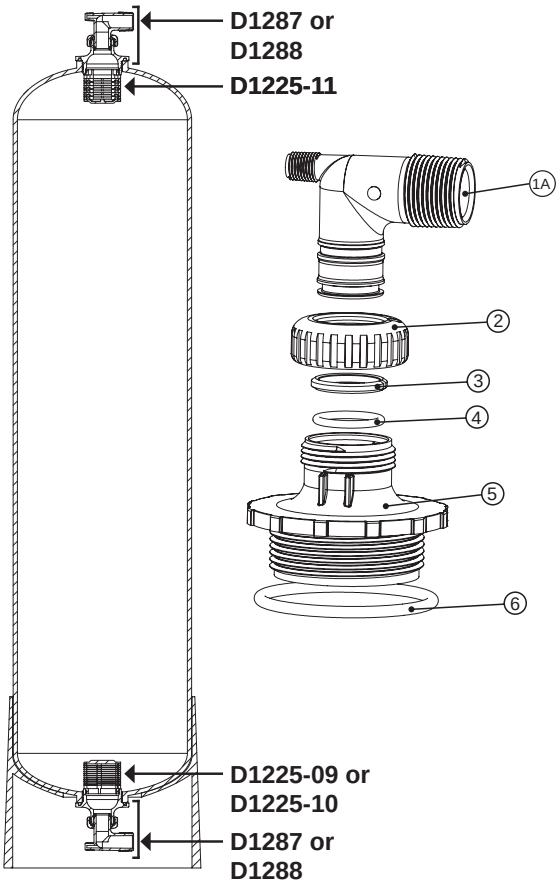
D1225-10

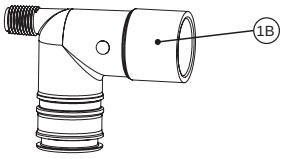
D1225-11

D1225-09

D1225-10

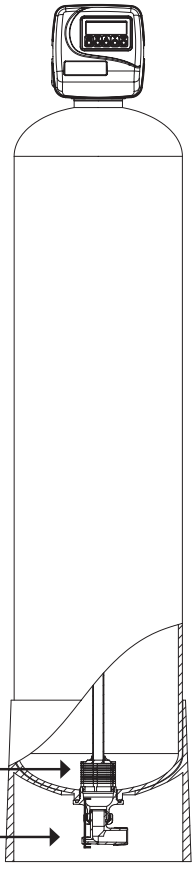
D1225-11





No.	Order No.	Description
1A	V3149	WS1 Fitting 1" PVC Male NPT Elbow
1B	V3189	WS1 Fitting ¾" & 1" PVC Solvent Elbow
2	V3151	WS1 Nut 1" Quick Connect
3	V3150	WS1 Split Ring
4	V3105	O-ring 215
5	D1285	Fitting 2-½" - 8
6	V3180	O-ring 337

D1212-25



1191/1190FP In-Out Heads

1191 In-Out Head

Order Number: D1400

1190FP In-Out Head with Fill Port

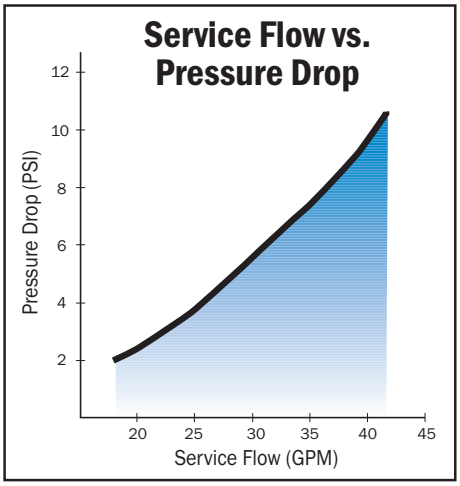
Order Number: D1220-01

The 1191/1190FP 1" In-Out Heads are designed for downflow filter applications or upflow pH neutralization.

Molded out of a rugged thermoplastic resin, the 1191 Head features a ¼" FPT air vent port which can be drilled out to accept an air relief valve. The 1" Head is fully ported to provide maximum flow rates.* The 1191 incorporates a standard 2½" tank connection and features parallel inlet and outlet ports to easily adapt to standard plumbing connections or Clack's all-plastic, four-way bypass valve. A full line of fitting plumbing connection kits are available.

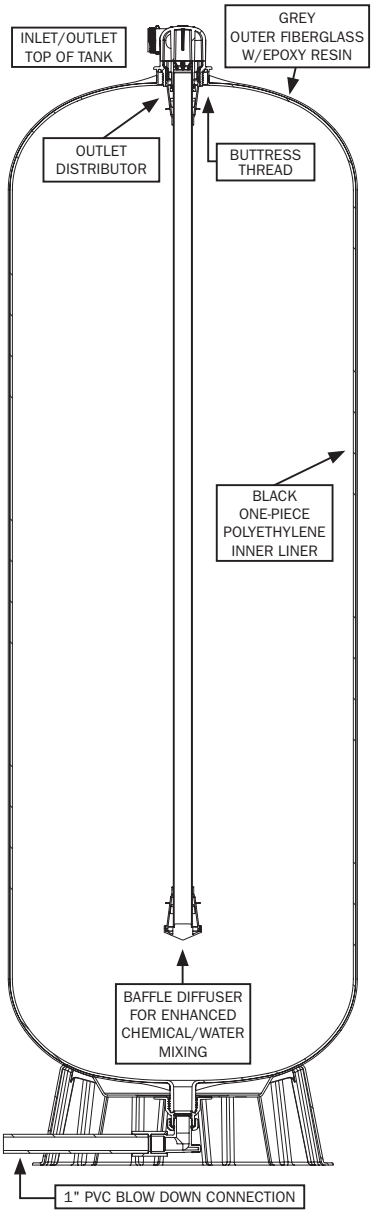
The 1190FP Head has a removable fill port cap to allow easy access to the media bed. The 1190FP includes a removable upper distributor basket providing access to the top of the riser pipe, allowing water to be drained from the tank when replacing media. The 1190FP includes a utility wrench to be used with the removable cap. A full line of top and bottom distributors is available.

*Note: Riser pipe port is sized for a 1.050" O.D. pipe.



ORDER NO.	DESCRIPTION	QTY/ CARTON
D1400	1191 In-Out Head	24
D1220-01	1190FP In-Out Head w/ Fill Port (includes wrench)	12

Retention Tanks



ALL PARTS INCLUDED AS SHOWN

FEATURES:

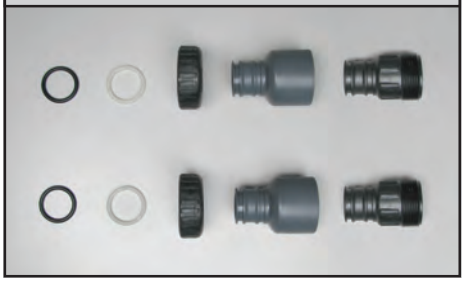
- Convenient Inlet/Outlet piping connection at the top of the tank
- Inlet/Outlet Adapter easily accommodates the use of a vacuum breaker
- Inlet/Outlet Buttress thread for strength
- Bypass valve option available
- Full 1" blow down drain at lowest point of tank
- 360° degree drain orientation
- Black one piece polyethylene liner for impact and corrosion resistance
- 5 year limited warranty

SPECIFICATIONS:

- Maximum Operating Pressure 75 psi/517 kPa
- Maximum Operating Temperature 120°F / 49°C

FITTINGS INCLUDED:

1¼" x 1½" PVC Straight Solvent Fitting Kit and
1¼" Plastic Straight Male NPT Fittings



OPTIONAL:

Bypass

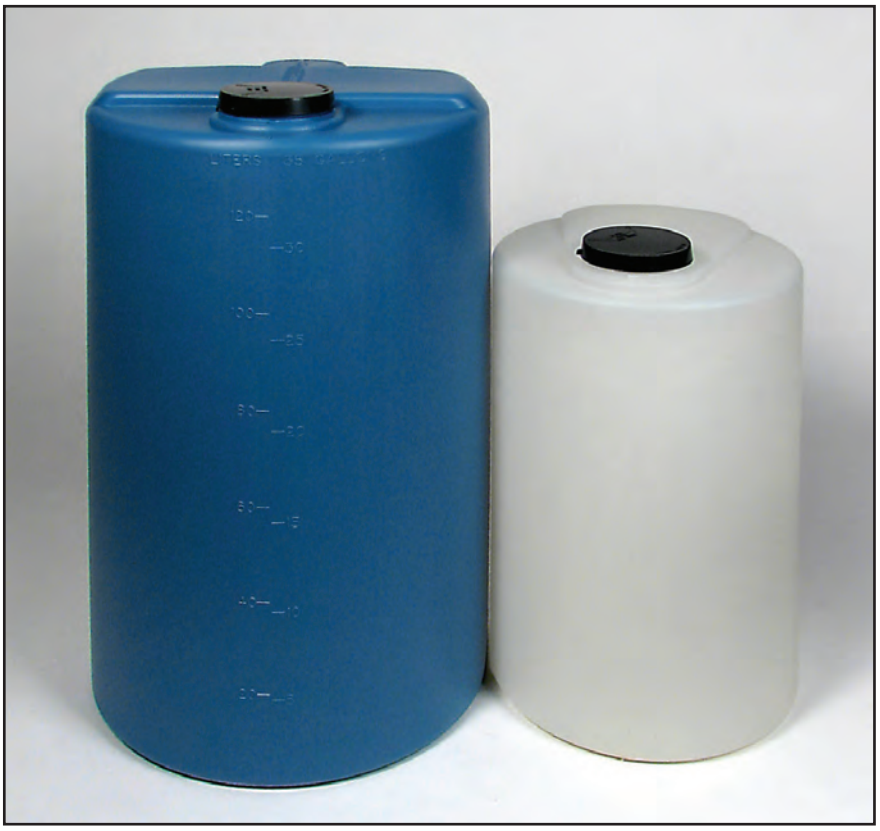
Order No. V3006

ORDER NO.	DESCRIPTION	TANK ASSEMBLY DIAMETER INCHES/MM	TANK ASSEMBLY HEIGHT INCHES/MM	CAPACITY GALLONS/LITERS	QTY/ CARTON	SHIPPING WEIGHT LBS/KG
C2250	RT40 Retention Tank	21/533	40.5/1,029	40/151	1	37/17
C2251	RT80 Retention Tank	21/533	67.5/1,715	80/303	1	66/30
C2252	RT120 Retention Tank	24/607	78.5/1,994	120/454	1	80/36

ORDER NO.	DESCRIPTION	QTY/CARTON	SHIPPING WEIGHT LBS/KG
V3006	Bypass	24	26/12

Low-cost chemical storage tanks made for years of dependable service.

110 Series Solution Tanks



ORDER NUMBER	DESCRIPTION	UNITS PER CARTON/WEIGHT
G21424*N7C00	15 gallon with closure	1/7
G21832*N7C00	35 gallon with closure	1/19

** A=Almond, B=Blue, P=Polynatural.*
Almond not available in the 35-gallon size.

Clack's line of low-cost, high-quality chemical feed and storage tanks are manufactured from rugged high density polyethylene for years of dependable service, even in the toughest environments.

Available in several colors, Clack's 110 Series Solution Tanks are designed with 110 mm openings for easy access and convenient filling. The wide diameter openings also allow adequate clearance to reach inside for assembly of fittings.

Clack's child-resistant closure deters accidental entry, while the special cap liner prevents accidental leaks when cap is properly applied.

Convenient 15-gallon size is perfect for use in tight spaces. The larger 35-gallon size accommodates pumps, mixers, and other accessories for light commercial and industrial use.

Call Clack today and find out how you can save substantially on 15-gallon and 35-gallon chemical storage tank costs by using 110 Series Solution Tanks.

Programmed Feeder and Resin Cleaner for more efficient water conditioning resin and brine systems.

Res-Up Feeders

The most efficient water softener media are resin beads honeycombed with microscopic pores. As raw water passes through the medium impurities are deposited around the resin beads and in the pores. The brine bath removes the impurities but, alone, can't penetrate the pores or remove iron and slime deposits.

RES-UP CLEANER is formulated to penetrate bead pores and loosen up and float away iron and other impurities. Res-Up Cleaner will also keep softener components and control valve parts free of build-ups which impair proper functions.

RES-UP FEEDER is a programmed feeder which meters the proper amount of Res-Up Cleaner each time the resin bed is regenerated. The Res-Up Feeder can be programmed for the size of the resin bed and the amount of iron and impurities in the raw water.

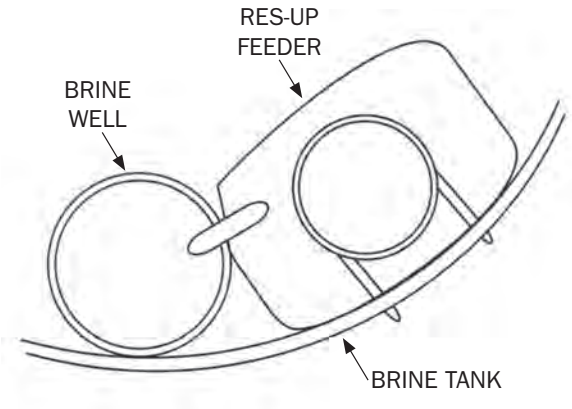
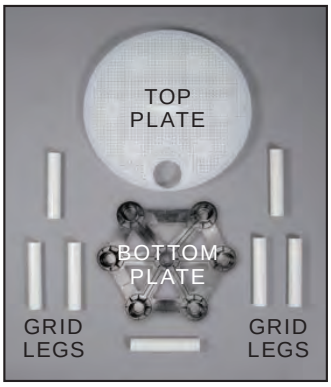


Figure 1

Commercial Brine Tank Components

494 Brine Valve/5" Slotted Brine Well Component Kit

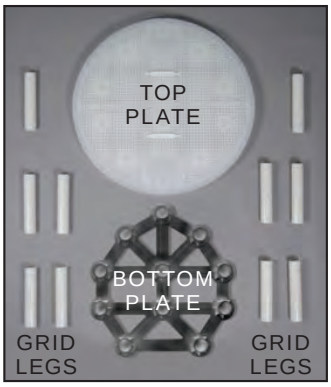


24" Plastic Grid
(Grid Legs Sold Separately)

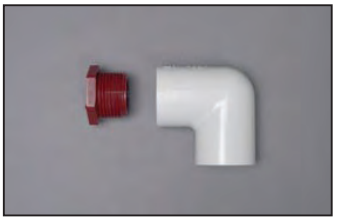
1/2 x 3/8 Black Polytube 100 Ft Roll

1/2 x 3/8 Natural Polytube 100 Ft Roll

494 Air Check/5" Slotted Brine Well Component Kit



30" Plastic Grid
(Grid Legs Sold Separately)



1" Commercial Overflow Fitting

Order Information:

Order No.	Description	Qty/Carton
494 Brine Valve/5" Slotted Brine Well Component Kit		
H4900-48BV	494 Brine Valve/5x48 Slotted Brine Well Component Kit 1/2" Connection	6
H4900-60BV	494 Brine Valve/5x60 Slotted Brine Well Component Kit 1/2" Connection	6
H4900-48BV-01	494 Brine Valve/5x48 Slotted Brine Well Component Kit 5/8" Connection	6
H4900-60BV-01	494 Brine Valve/5x60 Slotted Brine Well Component Kit 5/8" Connection	6
494 Air Check/5" Slotted Brine Well Component Kit		
H4900-48AC	494 Air Check/5x48 Slotted Brine Well Component Kit 1/2" Connection	6
H4900-60AC	494 Air Check/5x60 Slotted Brine Well Component Kit 1/2" Connection	6
H4900-48AC-01	494 Air Check/5x48 Slotted Brine Well Component Kit 5/8" Connection	6
H4900-60AC-01	494 Air Check/5x60 Slotted Brine Well Component Kit 5/8" Connection	6
Grids, Polytubing and Overflow Fitting		
H1080	24" Grid (2 plates/set) For 4", 5", 6" Brine Wells	5 sets
H1089	24" Grid Legs 9 7/8" (7/set)	5 sets
H1032	30" Grid (2 plates/set) For 4", 5", 6" Brine Wells	3 sets
H1087	30" Grid Legs 9 7/8" (11/set)	3 sets
H1041	Polytube 1/2" x 3/8" - Black - 100 Ft Roll	4 rolls
H1041-01	Polytube 1/2" x 3/8" - Natural - 100 Ft Roll	4 rolls
H1012	1" Commercial Overflow Fitting	1

For the regeneration of systems that use MTM®, Manganese Greensand or GreensandPlus™.

Potassium Permanganate Feeder

Clack's Potassium Permanganate Feeder Assembly incorporates a non-pressurized storage tank and innovative grid design along with our dependable 464 float valve. The attractive 10"x16" tank is made of tough blow molded high density polyethylene, and contains an ultraviolet inhibitor (UVI) for increased resistance to sunlight.* It has a Potassium Permanganate capacity of 30 pounds and a liquid capacity of five gallons. Feeders are available in blue, almond, or black and can be ordered in two, four, or six ounce delivery capacities.

The black injection molded cover is securely fastened with two stainless steel safety screws to prevent access by children and pets. The fill port on the cover also includes a child resistant closure. (As with all chemicals, the potassium permanganate chemical tank should be placed safely away from children or pets). Chemical warning and drain caution labels are affixed to the unit.

The unique polypropylene felt grid pad retains even the finest grade of undissolved Potassium Permanganate above the grid. This permits efficient use of our assembly with all grades of Potassium Permanganate.

Two and four ounce feeders have a grid platform height of 5 inches. Six ounce feeders have a grid plat-form height of 7½ inches. The unit is shipped fully tested and assembled in individual cartons. Shipping weight is seven pounds. Please consult the factory for further information.

IRON AND MANGANESE REMOVAL:

A recommended dose of 1½ - 2 ounces of Potassium Permanganate per cubic foot of MTM®, Manganese Greensand or GreensandPlus™ is suggested for regeneration.

Correct water temperature is important to properly dissolve Potassium Permanganate. At 50°F (10°C) four ounces of Potassium Permanganate can dissolve in one gallon of water. At room temperatures (72°F - 22°C) eight ounces will dissolve in one gallon of water.

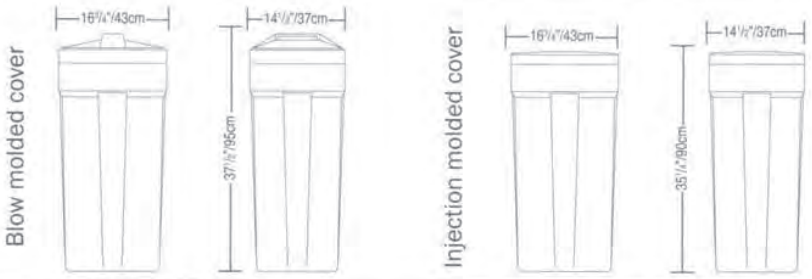
For further information please contact our technical department.

*Please note: Black HDPE tanks do not require UVI. Black colored HDPE is naturally resistant to sunlight.

CHARGER

High quality brine tanks in a variety of colors to suit any application.

15 x 17 Series Brine Tank



Clack's state-of-the-art equipment produces consistently high quality products like our 15 x 17 series brine tanks. Our blow molded tapered rectangular brine tank offers a new dimension in the brine tank field. Integral structural design delivers strength in the stress-prone areas to minimize bulging when filled with brine salt, yet provides the "soft look." Molded of high-density polyethylene, the 15 x 17 series is available with the standard blow molded handle cover or with an attractive black injection molded cover. Ultraviolet inhibitors (UVI) are standard in all tanks with the exception of black, which is naturally resistant to the sun's rays.

Advantages:

- Nestable design reduces freight rates.
- Available with blow molded handle cover; or dress it up with a gblack injection molded cover for a striking color contrast.
- It's available in several colors: almond, blue, black and white to meet customer requirements.
- Optional injection molded grid system promotes consistent brining and reduces salt bridging.

ORDER NUMBER	DESCRIPTION	LIQUID CAPACITY (gal/liters)	SALT CAPACITY (lbs/Kg)	SHIPPING WEIGHT (lbs/Kg)	MASTER CARTON ($ft.^3$/units per)
G21517*E7C00	15 x 17 x 33 inch tank with black injection molded cover	33/125	275/125	42/19	8.5/4
G21517*B1C00	15 x 17 x 36 inch tank with blow molded handle cover	33/125	275/125	44/20	8.5/4

** – Color code digit: A - Almond, B - Blue, C - Black, W - White*

18-inch Round Brine Tanks

Clack's 18-inch blow molded round brine tanks offer a refreshing look in the residential and light commercial brine tank field. Durable materials and the latest in plastic processing technology provide trouble-free performance. Ultraviolet inhibitors (UVI) are now standard in all tanks except black, which has a natural resistance to the sun's rays. Three different sizes are available for up to 450 lbs. of salt capacity.

Advantages:

- Attractive design to meet customer appeals with four modern stock colors to choose from — almond, blue, black and white. (Custom colors available.)
- Blow molded from high-density polyethylene to give exceptional environmental stress-crack properties providing years of trouble-free service.
- These tanks can be top loaded on other Clack water treatment components and drinking water systems to substantially reduce total shipping costs.
- All round brine tanks are individually shipped in a durable 150# test reshipper carton.
- Optional injection molded grid promotes uniform brining and reduced salt bridging.

ORDER NUMBER	DESCRIPTION
G21826BB1C00	18x26 blue brine tank with blow molded cover
G21833[*]B1C00	18x33 brine tank with blow molded cover
G21833[*]G7CWG	18x33 brine tank with black injection molded cover with woodgrain insert
G21840[*]B1C00	18x40 brine tank with blow molded cover
G21840[*]G7CWG	18x40 brine tank with black injection molded cover with woodgrain insert
[*] Color code digit: A - Almond, B - Blue, C - Black, W - White	

TANK SIZE	LIQUID CAPACITY		SALT CAPACITY		DIAMETER		HEIGHT W/ LID		SHIPPING WEIGHT		MASTER CARTON
in.	gal.	liters	lbs.	Kg	in.	cm	in.	cm	lbs.	Kg	ft.³/units per
18 x 26	27	102	275	125	18½	47	25	64	12	5.5	5.5/1
18 x 33	36	136	375	170	18½	47	33¼	84	12	5.5	7/1
18 x 40	43	163	450	205	18½	47	40¾	104	15	6.8	9/1

Commercial/Industrial Rotationally Molded Brine Tanks

Commercial and industrial water softeners require a large volume of brine during each regeneration. From a capacity of 95 gallons to 500 gallons, our Rotationally Molded Brine Tanks are built to last. Molded out of durable, chemically resistant high density polyethylene, their 1/4" seamless walls won't bulge. All tanks and covers are black. Rotationally Molded Brine Tanks are strong enough to handle your toughest brine requirements.

Also available:

24" Plastic Grids

30" Plastic Grids

Please consult factory for order numbers.

TANK SIZE	ORDER NUMBER	DIAMETER	HEIGHT	SALT CAPACITY	VOLUME	WEIGHT
24 x 48	G22448CB1P00	24"	48"	800 lbs.	95 gal.	30 lbs.
24 x 60	G22460CB1P00	24"	60"	1000 lbs.	115 gal.	32 lbs.
30 x 48	G23048CB1P00	30"	48"	1200 lbs.	145 gal.	48 lbs.
30 x 60	G23060CB1P00	30"	60"	1600 lbs.	180 gal.	56 lbs.
39 x 48	G23948CB1P00	39"	48"	2200 lbs.	250 gal.	67 lbs.
39 x 60	G23960CB1P00	39"	60"	2700 lbs.	300 gal.	80 lbs.
42 x 60	G24260CB1P00	42"	60"	3100 lbs.	350 gal.	84 lbs.
50 x 60	G25060CB1P00	50"	60"	4500 lbs.	500 gal.	107 lbs.

High quality brine tanks in a variety of colors to suit any application

14 x 14 Series Brine Tanks

14 x 14 Series Brine Tank with Blow Molded Cover

14 x 14 Series Brine Tank with Injection Molded Cover

Clack's state-of-the-art equipment produces consistently high quality products like our 14 x14 series brine tank. Our blow molded tapered square brine tank offers a new dimension in the brine tank field. Integral structural design delivers strength in the stress prone areas to minimize bulging when filled with salt, yet provides the "soft look". An optional plastic grid is available to promote consistent brining and reduce salt bridging.

Molded of high density polyethylene, the 14 x14 is available in all of our popular colors. Ultraviolet inhibitors (UVI) are standard in all tanks with the exception of black, which is naturally resistant to the sun's rays.

Tanks are nestable and sold 5 per box.

ORDER NUMBER	DESCRIPTION	LIQUID CAPACITY (gal/liters)	SALT CAPACITY (lbs/Kg)	SHIPPING WEIGHT (lbs/Kg)	MASTER CARTON ($ft.^3$/units per)
G21414*B1C00	14 x 14 x 34 brine tank with blow molded handle cover	25/95	225/102	40/18	8.5/5
G21414*C7C00	14 x 14 x 34 brine tank with black injection molded cover	25/95	225/102	40/18	8.5/5

* Color code digit: A-Almond; B-Blue; C-Black; W-White

Water Facts

CHARGER

Water Measures	
1 cu. ft.	= 7.48 gallons
1 cu. ft.	= 29.92 quart
1 cu. ft.	= 59.84 pint
1 cu. ft.	= 119.68 cups
1 cu. ft.	= 1,915 tablespoons
3 teaspoons	= 1 tablespoon
16 tablespoons	= 1 cup
2 cups	= 1 pint
2 pints	= 1 quart
4 quarts	= 1 gallon
2 tablespoons	= 1 liquid ounces
16 ounces	= 1 liquid pint
32 ounces	= 1 liquid quart
128 ounces	= 1 liquid gallon
11,600 drops	= 1 liquid gallon
1 ppm	= 1 mg/liter
17.1 ppm	= 1 grain per gallon
453 grams	= 1 lb.
1 teaspoon	= 5 ML
1 tablespoon	= 15 ML
1 cup	= 236 ML
1 pint	= 473.6 ML
1 quart	= 947 ML
1 gallon	= 3785 ML
1 cu. ft.	= 28,311 ML
1 gallon	= 8.345 lbs.
1 gallon	= 3.785 liters
1 liter	= 2.2 lbs.
1 cu. ft.	= 7.48 gallons
1 cu. ft.	= 62.4 lbs.
1 cu. yard	= 27 cu. ft.
1 cu. yard	= 202 gallons
12 inches	= 1 foot
3 feet	= 1 yard
5-1/2 yards	= 1 rod
5,280 feet	= 1 mile
1 cu. in.	= 16.39 cu. CM
.61 cu. in.	= 10 cu. CM
1 ft. of water height	= .434 psi
2.31 ft. of water height	= 1 psi

Water Weights	
62.4 lbs. per cu. ft.	8.33 lbs. per gallon

Medias	Per Cubic Foot
High Capacity Resin	51 lbs.
Greensand	85 lbs.
Birm	50 lbs.
Activated Carbon	26 lbs.
Calcite	100 lbs.
Corosex	100 lbs.
Filter-Ag	25 lbs.
Gravel	100 lbs.
Salt (granulated)	78 lbs.

Farm Water Requirements	
	Approximate Gallons Per Day
Each Person	65
Each Horse	10
Each Milk Cow	20
Each Dry Cow	12
Each Swine Over 180 lbs.	4
Each Sheep	2
100 Chickens	6

Water Per Foot Of Pipe		
Diameter	Cubic Foot	Gallons
1/2"	.0014	.01
3/4"	.0031	.023
1"	.006	.04
1-1/2"	.012	.09
2	.022	.16
2-1/2"	.034	.26
3"	.049	.37
4"	.087	.65
5"	.136	1.02
6"	.196	1.47
8"	.349	2.61
10"	.545	4.08

Water Facts

Water Fact:

The average family uses 113,000 gallons of water per year in their home.

Capacities Of Water Piping [In U.S. G.P.M.]								
	Nominal Pipe Size							
Pressure	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
17 lbs.	9.1	18.7	33.5	51.6	106	200	290	589
30 lbs.	14	28	52	78	160	308	436	885
40 lbs.	16	33	60	90	184	350	504	1023
50 lbs.	17.5	37	70	101	206	390	564	1143
60 lbs.	19.5	40	76	110	226	430	617	1252
75 lbs.	22	45	85	123	253	480	690	1400
100 lbs.	25	52	99	142	292	558	797	1607

Steam boiler requirements: 4 gallon per hour of horsepower rating less percent of condensate return.

Salt Settings	
As a rule of thumb, one pound of salt will return 3,000 grains of softening capacity. Total the grains estimated to be used between regenerations and set salt consumption accordingly or use the following chart.	
SALT SETTING	WILL RECOVER GRAINS
4 lbs.	12,000
5 lbs.	15,000
6 lbs.	18,000
7 lbs.	21,000
8 lbs.	24,000
9 lbs.	27,000
10 lbs.	30,000
11 lbs.	33,000
12 lbs.	36,000
13 lbs.	39,000
14 lbs.	42,000
15 lbs.	45,000
16 lbs.	48,000
17 lbs.	51,000
18 lbs.	54,000
19 lbs.	57,000
20 lbs.	60,000
21 lbs.	63,000
22 lbs.	66,000
23 lbs.	69,000
24 lbs.	72,000
25 lbs.	75,000
26 lbs.	78,000
27 lbs.	81,000
Steam boiler requirements: 4 gallon per hour of horsepower rating less percent of condensate return.	

Apartments And Trailer Parks							
Figures are based on 50 gallons (189 l) per person per day, 3 people per unit, each unit containing a bathroom, kitchen sink and laundry tub.							
NUMBER OF UNITS	5	10	15	20	30	40	50
Total water usage (except sprinkling)	750	1,500	2,250	3,000	4,500	6,000	7,500
gal/day (m3/day)	(2.8)	(5.7)	(8.5)	(11.4)	(17.0)	(22.7)	(28.4)
Peak gpm (lisec.) with flush valves	50 (3.2)	68 (4.3)	80 (5.1)	90 (5.7)	109 (6.9)	128 (8.1)	145 (9.2)
Peak gpm (l/sec.) with flush tanks	23 (1.5)	35 (2.2)	45 (2.8)	53 (3.3)	67 (4.2)	80 (5.0)	93 (5.9)
Toilets by-passed gal/day (m3/day)	450	900	1,350	1,800	2,700	3,600	4,500
[Estimate 30 gal (113.61)/person]	(1.7)	(3.4)	(5.1)	(6.8)	(10.2)	(13.6)	(17.0)
Toilets by-passed, flow gpm (lisec.)	20 (1.3)	32 (2.0)	42 (2.7)	49 (3.1)	61 (3.9)	73 (4.6)	84 (5.3)
Hot water only gal/day (m3/day)	300	600	900	1,200	1,800	2,400	3,000
[Estimate 20 gal (75.7l)/person]	(1.1)	(2.3)	(3.4)	(4.5)	(6.8)	(9.1)	(11.4)
Hot water only, flow gpm (lisec.)	13 (0.8)	23 (1.5)	31 (2.0)	36 (2.3)	46 (3.0)	54 (3.4)	62 (4.0)

Motels									
Figures are based on 40 gallons (1511) per person per day, 2,112 people per unit, each unit containing a bathroom group. Estimate water usage for restaurant or cocktail bar facilities separately									
NUMBER OF UNITS	10	20	30	40	50	75	100	125	150
Total water usage gal/day (m3/day)	1,000 (3.8)	2,000 (7.6)	3,000 (11.4)	4,000 (15.1)	5,000 (18.9)	7,500 (28.4)	10,000 (37.9)	12,500 (47.3)	15,000 (56.8)
Peak gpm (l/sec.) with flush valves	68 (4.3)	90 (5.7)	109 (6.9)	128 (8.1)	145 (9.2)	180 (11.4)	210 (13.2)	240 (15.1)	270 (17.0)
Peak gpm (l/Sec.) with flush tanks	28 (1.8)	43 (2.7)	55 (3.5)	65 (4.1)	75 (4.7)	105 (6.6)	130 (8.2)	152 (9.6)	172 (10.9)
Toilets by-passed gal/day (m3/day)	625	1,250	1,875	2,500	3,125	4,690	6,250	7,815	9,375
[Estimate 25 gal (94.61)/person]	(2.4)	(4.7)	(7.1)	(9.5)	(11.8)	(17.8)	(23.7)	(~9.6)	(35.5)
Toilets by-passed, flow gpm (lisec.)	25 (1.6)	38 (2.4)	48 (3.0)	58 (3.7)	67 (4.2)	84 (5.3)	105 (6.6)	125 (7.9)	145 (9.2)
Hot water only gal/day (m3/day)	400	800	1,200	1,600	2,000	3,000	4,000	5,000	6,000
[Estimate 16 gal (60.6l)/person]	(1.6)	(3.0)	(4.5)	(6.1)	(7.6)	(11.4)	(15.1)	(18.9)	(22.7)
Hot water only, flow gpm (lisec.)	17 (1.1)	28 (1.8)	36 (2.3)	43 (2.7)	48 (3.0)	62 (4.0)	73 (4.6)	85 (5.4)	96 (6.1)

Other Establishments	
Because of the wide variation in number and type of fixtures used for the following establishments water usage figures only are given.	
SCHOOLS	With cafeteria and showers, estimate 25 gal (94.6 l)/day per student (total water usage), or estimate 10 gal 37.91)/day per student (hot only). With cafeteria, no showers, estimate 15 gal (56.8l)/day per student (total water usage), or estimate 4 gal (15.1 l)/day per student (hot only).
RESTAURANTS	Estimate 10 gallons (37.91) per person per day (total water usage), or estimate 4 gallons (15.1 l) per person per day (hot only). Add 30% water usage for 24 hour restaurants, add 2 gal (7.6 l)/person/day for cocktail bar facilities.
HOSPITALS	Estimate 250 gallons (946.3 l) per day per bed (total water usage), or estimate 170 gallons (643.5 l) per day per bed (hot only).
NURSING HOMES	Estimate 75 gallons (283.91) per day per bed (total water usage), or estimate 50 gallons (189.31) per day per bed (hot only).
DORMITORIES	Estimate 40 gallons (151.4/) per person per day (total water usage), or estimate 16 gallons (60.6 l) per person per day (hot only.
OFFICE BUILDING	Estimate 15 gallons (56.8 l) per person per day (total water usage), or estimate 2 gallons (7.61) per person per day (hot only).

To Determine Daily Make Up In Gallons:	
BOILERS	1. Multiply boiler horsepower by 4.25. 2. Then multiply (1) by hours per day operation. 3. Then multiply by the % operating rating. 4. Then subtract the % of condensate return.
COOLING TOWERS	To determine daily make up in gallons: 1. Multiply the tonnage by 4. (T is includes 2 gal (7.6 l)/hour/ton evaporation and 2 gal (7.6 l)/hour/ton bleed off). 2. Then multiply (1) by the hours per day operation.

Chlorine Data		
5-1/4% liquid bleach		14% commercial bleach
1 teaspoon contains	68 ppm	182 ppm
1 tablespoon contains	205 ppm	547 ppm
1 cup contains	3,280 ppm	8,750 ppm
1 pint contains	6,563 ppm	17,500 ppm
1 quart contains	13,125 ppm	35,000 ppm
1 gallon contains	52,500 ppm	140,000 ppm

1 Gram Dry Chlorination Pellets 70%	
Each pellet contains	180 ppm chlorine per gallon
453 pellets equals	1 lb.
1 lb. of pellets equals	81,540 ppm chlorine
10 lbs. of pellets equals	815,400 ppm chlorine

Chlorine Demand Of Water	
To oxidize each ppm of iron requires	6 ppm chlorine
To oxidize each ppm of manganese requires	1.2 ppm chlorine
To oxidize each ppm of hydrogen sulphur requires	3.0 ppm chlorine
To disinfect iron bacteria requires	1-3 ppm chlorine
To disinfect normal amounts of bacteria requires	1-3 ppm chlorine
To provide normal residual in private wells requires	1 ppm chlorine

Calculating Pellet Useage	Example:
1. Multiply the ppm each of any iron, manganese and sulphur by the chlorine required.	Iron - 5 ppm x .6 chlorine = 3 ppm Manganese -.84 x 1.2 = 1 ppm Sulphur - 1 ppm x 3 = 3 ppm
2. Add estimated chlorine demand of any iron bacteria, other bacteria or algae present.	Bacteria - 1 ppm x 1 = 1 ppm
3. Add one ppm for residual.	Residual Chlorine = 1 ppm
4. Total up for final amount of demand and residual combined.	Total Feedage
5. Divide this number into 180 [the amount of chlorine per pellet].	180 + 9 = 20 gallons per pellet
You now have the gallons of water that can be treated per pellet.	
Multiply by 453 for the amount of water that will be treated per lb. of pellets.	20 x 453 = 9,060 gallons per lb. of pellets

CALCIUM HYPOCHLORITE

- **1ppm = 8.3 pounds of chemical per million gallons of water**
- **2 ounce of Calcium Hypochlorite per gallon = 1% solution**
- **Maximum Calcium Hypochlorite that can be dissolved in one gallon of water is 11 ozs.**
- **1 ounce of Calcium Hypochlorite per 5000 gallons = 1ppm**

R.O. Systems | Low Pressure

Most companies rate their R.O. System's daily output when the incoming water is 77˚ F, 50-70 psi and 500-700 TDS.

If the water you are treating does not meet these qualifications, your output probably will not reach the stated daily amount. Here are simple formulas to use in estimating the real output of a R.O. System.

1. Temperature: For each degree fahrenheit under 77˚, deduct 1-1/2% from maximum daily output.
2. TDS: Each 100 ppm TDS over 500 will add one pound backpressure against the membrane. For each 100 TDS over 500, deduct 5% of maximum daily output.
3. PSI: For each pound psi under the rated capacity, deduct 4% from maximum daily output.

As you can see, there are water supplies where R.O. Systems may not work. TDS over 2,000 or a psi under 30 pounds when combined with temperature normally will not produce quality or quantity of water. Check qualifications before you sell.

Nominal Rejection Characteristics Of Reverse Osmosis Membranes*					
Material	Symbol	% Rejection	Material	Symbol	% Rejection
Sodium	Na^{+}	87-93	Lead	Pb^{+2}	96-98
Calcium	Ca^{+2}	94-97	Chloride	Cl^{-1}	87-93
Magnesium	Mg^{+2}	96-98	Bicarbonate	HCO_{-3}	90-95
Potassium	K^{+}	87-94	Nitrate	NO^{-3}	40-65
Iron	Fe^{+2}	95-98	Flouride	F^{-}	87-93
Manganese	Mn^{+2}	9598	Silicate	SiO^{-2}	85-90
Aluminum	Al^{+3}	98-99	Phosphate	PO_4^{-3}	98-99
Ammonium	NH_{+4}	86-92	Chromate	CrO_4^{-2}	86-92
Copper	Cu^{+2}	98-99	Cyanide	CN^{-}	86-92
Nickel	Ni^{+2}	98-99	Sulphite	SO3-2	96-98
Zinc	Zn^{+2}	98-99	Thiosulfate	$S2O_3^{-2}$	98-99
Strontium	Sr^{+2}	96-98	Ferrocyanide	$FE(CN)_6^{-3}$	98-99
Cadmium	Cd^{+2}	96-98	Bromide	Br^{+}	87-93
Silver	Ag^{+}	93-96	Borate	$B_4O_2^{-2}$	30-50
Mercury	Hg^{+2}	96-98	Sulphate	SO_4^{-2}	98-99
Barium	Ba^{+2}	96-98	Arsenic	AS	94-96
Chromium	Cr^{+3}	96-98	Selenium	Se^{-2}	94-96
*Dependent on water pressure, TDS, temperature and type of membrane.					

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