

## Engineering Specification

Job Name \_\_\_\_\_

Contractor \_\_\_\_\_

Job Location \_\_\_\_\_

Approval \_\_\_\_\_

Engineer \_\_\_\_\_

Contractor's P.O. No. \_\_\_\_\_

Approval \_\_\_\_\_

Representative \_\_\_\_\_

# Series CWS-150

## Commercial Water Softening Systems

Connection Size: 1½"

Flow Rates: Up to 68 gpm (257 lpm)

Watts Series CWS-150 and CWSTA-150 water softening systems are highly efficient cation exchange type water softeners. These pre-engineered systems are suitable for commercial applications ranging from 40,000 to 300,000 grains of hardness removal and flow rates up to 68 (257 lpm) gallons per minute. Regeneration is meter demand initiated. Where continuous softened water is required CWSTA-150 duplex alternating systems can be specified for uninterrupted service. Regeneration is meter demand initiated. All cycles of regeneration are fully automatic and do not require manual actuation.

Watts Series CWS-150 and CWSTA-150 water softeners are designed for point of use or point of entry applications where the benefits of softened water are required. These systems exchange scale forming calcium and magnesium ions with non-scale forming sodium ions to create soft water for a variety of applications.

Steam boilers make up water, water heater pretreatment, reverse osmosis pretreatment, cooling tower make up water, sterilizer make up water, washing, and process water are all common applications for the Watts Series CWS-150 and CWSTA-150, water softeners. Watts Series CWS-150 are ideal for commercial and industrial applications where high flow and high capacities are required to accommodate wide variances in flow rates.

Softened water provides a wide variety of benefits from not introducing scale into pipes, valves, water heating equipment, heat exchangers, and cooling towers to reducing mineral build up in areas that see excessive splashing such as food preparation counters and sink areas. Softened water also conserves soaps and cleaning agents by eliminating the formation of soap curd, so your cleaners can work on cleaning not reacting with the hardness in your water.

### Features

Durable brass bodied control valve for years of service

- Fully automatic metered demand control valve certified to NSF/ANSI standards
- Sophisticated digital electronic controls that store operating history that can be accessed by the user
- Fully adjustable regeneration cycles
- High-capacity resin certified to NSF/ANSI standards
- Highly corrosion resistant fiberglass tanks certified to NSF/ANSI standards
- Durable polypropylene lower distribution system



Series CWS-150

Series CWSTA-150

### CWS-150 Features

- Model for capacities up to 300,000 grains per tank
- Each softening vessel comes complete with brine tank and meter
- All systems have stainless steel in-line flow meters

#### ⚠ WARNING

Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

#### NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

## Standards

- Control Valve- Certified to NSF/ANSI Std. 61 and 372
- Ion Exchange Resin- Certified to NSF/ANSI Std. 61 and 372
- Mineral Tank- Certified to NSF/ANSI Std. 44 or 61

## Specification

A Watts Series [CWS-150], [CWSTA-150], Model # [ ] water softening system shall be installed on the building's main water line just after it enters the building. The installation point shall be after any backflow prevention or pressure regulating valves. Other installation options are to install a system just before the water heater or other types of equipment needing the protection of softened water. In installations where dedicated cold water make up to a water heater is the installation point, a backflow preventer and a thermal expansion tank must be installed as well. The system shall be installed with a bypass valve to allow for the shut down and removal of the unit without interrupting the water supply to the building.

The water softener shall be a down flow regenerated, metered demand, sodium cycle cation exchange type system with all components necessary for proper operation.

Electrical requirements are 120-volt 60 hertz. A local drain is required to accept drain water from the system. The feed water pressure must not fall below 25psi or exceed 125psi. Water temperature must not fall below 34°F or exceed 110°F (1°C - 43°C). The system shall provide softened water measuring less than one grain per gallon of hardness as Calcium Carbonate when operated within the manufacturer's operational guidelines.

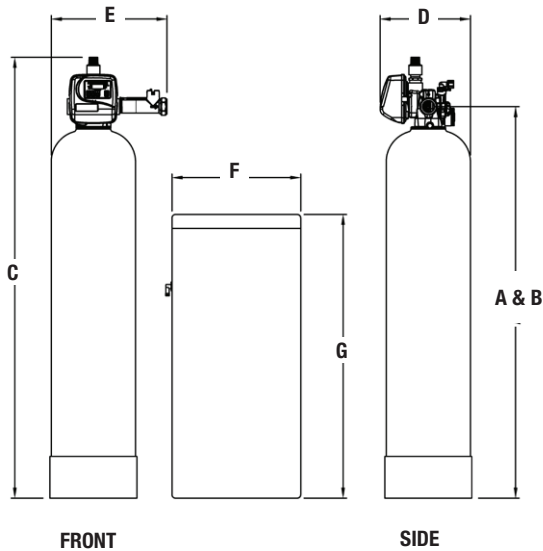
## Feed Water Guidelines

pH . . . . .	6 to 10
Hardness (maximum) . . . . .	Depends on customers acceptable hardness leakage level.
Water Pressure . . . . .	25psi to 125psi (171 kPa to 8.5 bar)
Temperature . . . . .	34 - 110°F (1 - 43°C)
Free Chlorine (maximum) . . . . .	1mg/L
Iron (maximum) . . . . .	1mg/L
Oil and H2S . . . . .	None Allowed
Turbidity . . . . .	Less than 5.0 NTU
Total Dissolved Solids . . . . .	Must be below 750mg/l for the softener to produce less than 1 grain per gallon soft water.

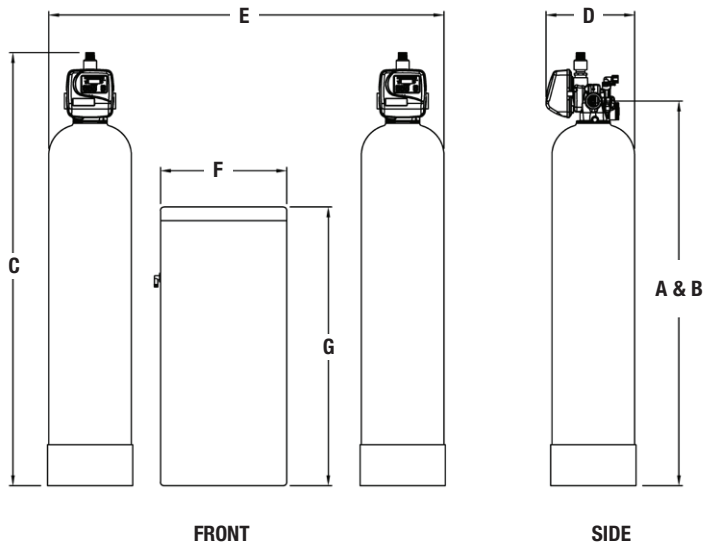
For all other guideline information please contact your Watts representative.

## Dimensions - Weights

CWS-150



CWSTA-150



## Series CWS-150

MODEL NO.	DIMENSIONS												WEIGHTS			
	A		B		C		D		E		F		G		lb	kg
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
M4410W	53 <sup>1</sup> / <sub>4</sub>	1353	53 <sup>1</sup> / <sub>4</sub>	1353	61	1550	12	305	16 <sup>3</sup> / <sub>4</sub>	425	18	457	40	1016	210	95
M4414W	68 <sup>1</sup> / <sub>4</sub>	1734	68 <sup>1</sup> / <sub>4</sub>	1734	73 <sup>5</sup> / <sub>8</sub>	1869	14	356	17 <sup>3</sup> / <sub>4</sub>	451	18	457	40	1016	240	109
M4418W	68 <sup>1</sup> / <sub>4</sub>	1734	68 <sup>1</sup> / <sub>4</sub>	1734	73 <sup>5</sup> / <sub>8</sub>	1869	16	406	18 <sup>3</sup> / <sub>4</sub>	476	18	457	40	1016	320	145
M4422W	68 <sup>1</sup> / <sub>4</sub>	1734	68 <sup>1</sup> / <sub>4</sub>	1734	73 <sup>5</sup> / <sub>8</sub>	1869	18	457	20 <sup>3</sup> / <sub>4</sub>	527	24	607	41	1041	380	172
M4426W	65 <sup>1</sup> / <sub>4</sub>	1657	65 <sup>1</sup> / <sub>4</sub>	1657	70 <sup>5</sup> / <sub>8</sub>	1793	21	533	21 <sup>1</sup> / <sub>4</sub>	540	24	607	41	1041	585	265
M4430W	75 <sup>1</sup> / <sub>4</sub>	1911	75 <sup>1</sup> / <sub>4</sub>	1911	80 <sup>5</sup> / <sub>8</sub>	2047	24	610	24 <sup>1</sup> / <sub>4</sub>	616	30	762	50	1270	710	322

## Series CWSTA-150

MODEL NO.	DIMENSIONS												WEIGHTS			
	A		B		C		D		E		F		G		lb	kg
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
M4410WTA	53 <sup>1</sup> / <sub>4</sub>	1353	53 <sup>1</sup> / <sub>4</sub>	1353	61	1550	12	305	52	1320	18	457	40	1016	420	190
M4414WTA	68 <sup>1</sup> / <sub>4</sub>	1734	68 <sup>1</sup> / <sub>4</sub>	1734	73 <sup>5</sup> / <sub>8</sub>	1869	14	356	60	1524	18	457	40	1016	480	218
M4418WTA	68 <sup>1</sup> / <sub>4</sub>	1734	68 <sup>1</sup> / <sub>4</sub>	1734	73 <sup>5</sup> / <sub>8</sub>	1869	16	406	60	1524	18	457	40	1016	640	290
M4422WTA	68 <sup>1</sup> / <sub>4</sub>	1734	68 <sup>1</sup> / <sub>4</sub>	1734	73 <sup>5</sup> / <sub>8</sub>	1869	18	457	70	1778	24	607	41	1041	760	345
M4426WTA	65 <sup>1</sup> / <sub>4</sub>	1657	65 <sup>1</sup> / <sub>4</sub>	1657	70 <sup>5</sup> / <sub>8</sub>	1793	21	533	75	1905	24	607	41	1041	1170	531
M4430WTA	75 <sup>1</sup> / <sub>4</sub>	1911	75 <sup>1</sup> / <sub>4</sub>	1911	80 <sup>5</sup> / <sub>8</sub>	2047	24	610	87	2210	30	762	50	1270	1420	644

## Specifications

MODEL NO.	MINERAL TANK			BRINE TANK		SOFTENING CAPACITY		LBS. SALT PER REGENERATION		FLOW RATE & PRESSURE		
	TANK SIZE	RESIN F <sup>3</sup>	GRAVEL	TANK SIZE	SALT FILL	MAX	MIN	MAX	MIN	SERV GPM	DROP PSI	BKW GPM
M4410W	12" x 52"	3	30 lbs.	18" x 40"	400	60 K	40 K	30	12	25/40	15/25	4
M4414W	14" x 65"	3	60 lbs.	18" x 40"	400	90 K	60 K	45	18	35/55	15/25	5
M4418W	16" x 65"	4	80 lbs.	18" x 40"	400	120 K	80 K	60	24	57/65	15/25	7
M4422W	18" x 65"	5	100 lbs.	24" x 41"	600	150 K	100 K	75	30	60/77	15/25	11
M4426W	21" x 62"	7	100 lbs.	24" x 50"	800	210 K	140 K	105	42	74/97	15/25	13
M4430W	24" x 72"	10	200 lbs.	30" x 50"	1400	300 K	200 K	150	60	80/100	15/25	15

### NOTICE

Capacities are based on resin manufacturer's data and are dependent upon influent water TDS, temperature, bed depth, and flow rates. Feed water must be free of oil and color. Pipe size, tank size, and space requirements are in inches. Capacities and flow rates expressed above are per tank. Flow rates listed at 25psi drops are for intermittent peak flow rates and are not to be used as continuous flows.

### NOTICE

Flow rates listed above are based on pressure drop only. Selecting a system based on pressure drop alone does not guarantee that the system will provide adequately softened water. System selection should be based on resin quantity, capacity required, feed water analysis, and application requirements.

## Ordering Information for 1-1/2" Simplex (CWS-150) and Duplex Alternating (CWSTA-150) Softeners

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED D X W X H	WEIGHT LBS
M4410W	68105557	2 Cubic Foot 1-1/2" Simplex Softener with Flow Meter	24" x 44" x 75"	210
M4414W	68106558	3 Cubic Foot 1-1/2" Simplex Softener with Flow Meter	24" x 44" x 75"	240
M4418W	68105559	4 Cubic Foot 1-1/2" Simplex Softener with Flow Meter	24" x 44" x 75"	320
M4422W	68105560	5 Cubic Foot 1-1/2" Simplex Softener with Flow Meter	24" x 50" x 87"	380
M4426W	68105561	7 Cubic Foot 1-1/2" Simplex Softener with Flow Meter	24" x 52" x 84"	585
M4430W	68105562	10 Cubic Foot 1-1/2" Simplex Softener with Flow Meter	39" x 69" x 96"	710
M4410WTA	68105548	2 Cubic Foot 1-1/2" Duplex Alternating Softener with Flow Meter	39" x 81" x 107"	420
M4414WTA	68108949	3 Cubic Foot 1-1/2" Duplex Alternating Softener with Flow Meter	24" x 64" x 75"	480
M4418WTA	68100950	4 Cubic Foot 1-1/2" Duplex Alternating Softener with Flow Meter	24" x 64" x 75"	640
M4422WTA	68109951	5 Cubic Foot 1-1/2" Duplex Alternating Softener with Flow Meter	24" x 68" x 89"	760
M4426WTA	68100052	7 Cubic Foot 1-1/2" Duplex Alternating Softener with Flow Meter	24" x 72" x 84"	1170
M4430WTA	68109953	10 Cubic Foot 1-1/2" Duplex Alternating Softener with Flow Meter	39" x 89" x 96"	1420



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