

## Engineering Specification

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

Contractor \_\_\_\_\_

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

Approval \_\_\_\_\_

Engineer \_\_\_\_\_

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

Approval \_\_\_\_\_

Representative \_\_\_\_\_

# Series CWS-300H

## Commercial Water Softening Systems

**Connection Size: 3"**

**Flow Rates: Up to 251 gpm (950 lpm)**

Watts Series CWS-300H, CWSTA-300H and CWSP-300H water softening systems are highly efficient cation exchange type water softeners. These pre-engineered systems are suitable for commercial applications ranging from 60,000 to 600,000 grains of hardness removal and flow rates up to 251 gallons per minute. Regeneration is meter demand initiated. Where continuous softened water is required CWSTA-300H duplex alternating and CWS-300H 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-300H, CWSTA-300H and CWSP-300H 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-300H, CWSTA-300H and CWSP-300H water softeners. Watts Series CWSP-300H 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-300H

Series CWSTA-300H



Series CWSP-300H

### CWS-300H Features

- Model for capacities up to 1,050,000 grains per tank
- Pre-engineered systems with up to 3 tanks in parallel for flow rates up to 750 GPM
- Arrange up to 16 tanks in parallel for higher flow and capacity custom configurations\*
- All systems have no hard water bypass valve
- Each softening vessel comes complete with brine tank and meter
- All systems have stainless steel in-line flow meters
- Modbus Capable

\*Must contact your Watts representative for proper equipment selection of system sizes exceeding 3 mineral tanks.

#### ⚠ WARNING

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

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

## Standards

Control Valve- Third party tested to NSF/ANSI Std. 61  
 Ion Exchange Resin- Certified to NSF/ANSI Std. 61  
 Mineral Tank- Certified to NSF/ANSI Std. 44 or 61

## Specifications

A Watts CWS300H water softening system shall be installed on A Watts Series [CWS-300H], [CWSTA-300H], and [CWSP-300H] 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. system shall provide softened water measuring less than one grain per gallon of hardness as Calcium Carbonate when operated within the resin manufacturer's operational specifications.

## Feed Water Guidelines

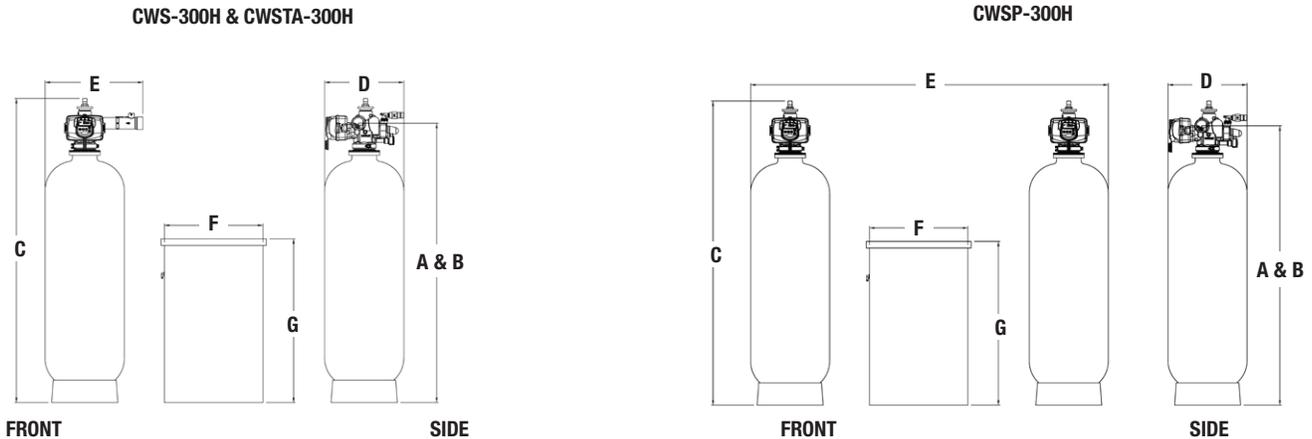
pH . . . . .	6 to 10
Hardness (maximum) . . . . .	Depends on customers acceptable hardness leakage level.
Water Pressure . . . . .	25psi to 125psi (171 kPa to 8.5 bar)
Temperature . . . . .	34 - 110°F (1 - 43°C)
Free Chlorine (maximum) . . . . .	1mg/L
Iron (maximum) . . . . .	1mg/L
Oil and H2S . . . . .	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.

### 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.

## Dimensions - Weight



### Series CWS-300H

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		
M4610WH	80 <sup>3</sup> / <sub>4</sub>	2051	80 <sup>3</sup> / <sub>4</sub>	2051	84 <sup>1</sup> / <sub>2</sub>	2146	24	610	24	610	30	762	50	1270	1070	486
M4612WH	80 <sup>3</sup> / <sub>4</sub>	2051	80 <sup>3</sup> / <sub>4</sub>	2051	84 <sup>1</sup> / <sub>2</sub>	2146	30	762	30	762	39	991	48	1219	1600	727
M4614WH	80 <sup>3</sup> / <sub>4</sub>	2051	80 <sup>3</sup> / <sub>4</sub>	2051	84 <sup>1</sup> / <sub>2</sub>	2146	36	914	36	914	39	991	48	1219	2015	916
M4616WH	80 <sup>3</sup> / <sub>4</sub>	2051	80 <sup>3</sup> / <sub>4</sub>	2051	84 <sup>1</sup> / <sub>2</sub>	2146	42	1067	42	1067	42	1067	60	1524	3245	1425
M4618WH	80 <sup>3</sup> / <sub>4</sub>	2051	80 <sup>3</sup> / <sub>4</sub>	2051	84 <sup>1</sup> / <sub>2</sub>	2146	48	1219	48	1219	50	1270	60	1524	4295	1946

**Series CWSTA-300H**

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		
M4610WHTA	80¾	2051	80¾	2051	84½	2146	24	610	85	2159	30	762	50	1270	2140	971
M4612WHTA	80¾	2051	80¾	2051	84½	2146	30	762	100	2540	39	991	48	1219	3200	1451
M4614WHTA	80¾	2051	80¾	2051	84½	2146	36	914	110	2794	39	991	48	1219	4030	1828
M4616WHTA	80¾	2051	80¾	2051	84½	2146	42	1067	125	3175	42	1067	60	1524	6490	2943
M4618WHTA	80¾	2051	80¾	2051	84½	2146	48	1219	150	3810	50	1270	60	1524	8590	3896

**Specifications**

MODEL NO.	MINERAL TANK			BRINE TANK		SOFTENING CAPACITY		LBS. SALT PER REGENERATION		FLOW RATE & PRESSURE		
	TANK SIZE	RESIN Ft³	GRAVEL	TANK SIZE	SALT FILL	MAX	MIN	MAX	MIN	SERV GPM	DROP PSI	BKW GPM
M4610WH	24" x 72"	10	200 lbs.	30" x 50"	1200	300 K	200 K	150	60	98/126	15/25	15
M4612WH	30" x 72"	15	400 lbs.	39" x 48"	2200	450 K	300 K	225	90	144/186	15/25	25
M4614WH	36" x 72"	20	500 lbs.	39" x 48"	2200	600 K	400 K	300	120	172/222	15/25	35
M4616WH	42" x 72"	30	700 lbs.	42" x 60"	3100	900 K	600 K	450	180	190/244	15/25	45
M4618WH	48" x 72"	35	900 lbs.	50" x 60"	4500	1050 K	700 K	525	210	194/251	15/25	60

**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 3" Simplex (CWS-300H) and Duplex Alternating (CWSTA-300H) Softeners**

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED D X W X H	WEIGHT LBS
M4610WH	68105575	10 Cubic Foot 3" Simplex Softener with Flow Meter	39" x 74" x 103"	1070
M4612WH	68105576	15 Cubic Foot 3" Simplex Softener with Flow Meter	39" x 77" x 107"	1600
M4614WH	68105577	20 Cubic Foot 3" Simplex Softener with Flow Meter	39" x 81" x 109"	2015
M4616WH	68105578	30 Cubic Foot 3" Simplex Softener with Flow Meter	42" x 90" x 117"	3245
M4618WH	68105579	35 Cubic Foot 3" Simplex Softener with Flow Meter	50" x 104" x 117"	4295
M4610WHTA	68109954	10 Cubic Foot 3" Duplex Alternating Softener with Flow Meter	39" x 100" x 103"	2140
M4612WHTA	68109955	15 Cubic Foot 3" Duplex Alternating Softener with Flow Meter	39" x 117" x 107"	3200
M4614WHTA	68109956	20 Cubic Foot 3" Duplex Alternating Softener with Flow Meter	39" x 129" x 109"	4030
M4616WHTA	68109957	30 Cubic Foot 3" Duplex Alternating Softener with Flow Meter	42" x 144" x 117"	6490
M4618WHTA	68109958	35 Cubic Foot 3" Duplex Alternating Softener with Flow Meter	50" x 164" x 117"	8590

**Ordering Information for 3" Duplex Progressive (CWSP-300H) Softeners**

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED D X W X H	WEIGHT LBS
M4610WHTI-NH	68110803	10 Cubic Foot 3" Progressive Duplex Softener with Flow Meter	59" x 80" x 106"	2140
M4612WHTI-NH	68110804	15 Cubic Foot 3" Progressive Duplex Softener with Flow Meter	74" x 92" x 107"	3200
M4614WHTI-NH	68110805	20 Cubic Foot 3" Progressive Duplex Softener with Flow Meter	80" x 98" x 110"	4030
M4616WHTI-NH	68110806	30 Cubic Foot 3" Progressive Duplex Softener with Flow Meter	90" x 100" x 117"	6490
M4618WHTI-NH	68110807	35 Cubic Foot 3" Progressive Duplex Softener with Flow Meter	106" x 114" x 123"	8590

**Ordering Information for 3" Triplex Progressive (CWSP-300H) Softeners**

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED D X W X H	WEIGHT LBS
M4610WHTR-NH	68110811	10 Cubic Foot 3" Progressive Triplex Softener with Flow Meter	59" x 131" x 106"	3210
M4612WHTR-NH	68110812	15 Cubic Foot 3" Progressive Triplex Softener with Flow Meter	74" x 137" x 107"	4800
M4614WHTR-NH	68110813	20 Cubic Foot 3" Progressive Triplex Softener with Flow Meter	80" x 147" x 110"	6045
M4616WHTR-NH	68110814	30 Cubic Foot 3" Progressive Triplex Softener with Flow Meter	90" x 150" x 117"	9735
M4618WHTR-NH	68110815	35 Cubic Foot 3" Progressive Triplex Softener with Flow Meter	106" x 171" x 123"	12885



USA: T: (800) 659-8400 • Watts.com

Canada: T: (905) 332-4090 • Watts.ca

Latin America: T: (52) 55-4123-0138 • Watts.com