

## Engineering Specification

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

Contractor \_\_\_\_\_

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

Approval \_\_\_\_\_

Engineer \_\_\_\_\_

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

Approval \_\_\_\_\_

Representative \_\_\_\_\_

# Series HC-300, HCTA-300 and HCP-300

## Commercial Water Softening Systems

**Connection Size: 3"****Flow Rates: Up to 1120 gpm (4239 lpm)**

Watts Series HC-300, HCTA-300, and HCP-300 water softening systems are highly efficient conventional cation exchange type water softeners. These pre-engineered systems are suitable for commercial applications ranging from 300,000 to 1,050,000 grains of hardness removal per tank and flow rates up to 1120 gpm (4239 lpm). Where continuous softened water is required HCTA-300 duplex alternating and HCP-300 systems can be specified for uninterrupted service. Regeneration is meter demand initiated. All cycles of regeneration are fully automatic.

Watts Series HC-300, HCTA-300, and HCP-300 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 boiler 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 HC-300, HCTA-300, and HCP-300 water softeners. Watts Series HCP-300 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 such as preventing lime scale formation in 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
- Dry contact lock out switch for remote interface is standard
- High capacity resin certified to NSF/ANSI standards
- Highly corrosion resistant fiberglass tanks certified to NSF/ ANSI standards
- Durable polypropylene lower distribution system



Series HC-300



Series HCTA-300



Series HCP-300

### HCP-300 Features

- Easily select duplex, triplex or quadplex systems with flow demand staging
- Model for capacities up to 1050,000 grains per tank
- Pre-engineered systems with up to 4 tanks in parallel for flow rates up to 1120 GPM
- Arrange up to 8 tanks in parallel for higher flow and capacity custom configurations\*
- All systems have no hard water bypass pistons
- Each softening vessel comes complete with brine tank and meter
- All systems have stainless steel in-line flow meters

\*Must contact your Watts representative for proper equipment selection of system sizes exceeding 4 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- 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

## Specifications

A Watts Series [HC-300], [HCTA-300], [HCP-300] 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 customer's 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 H<sub>2</sub>S . . . . . None Allowed

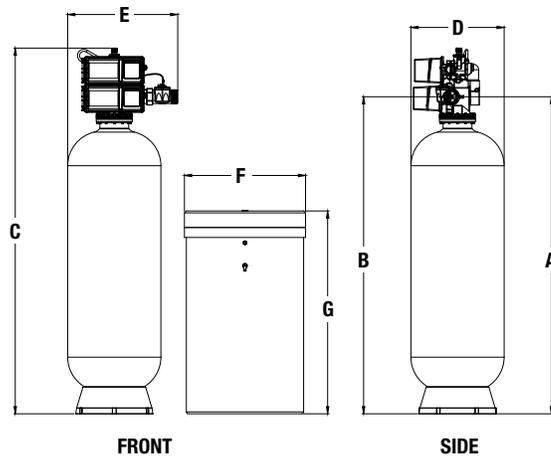
Turbidity . . . . . Less than 5.0 NTU

Total Dissolved Solids . . . . . Must be below 750mg/l for the softener to produce less than 1 grain per gallon soft water.

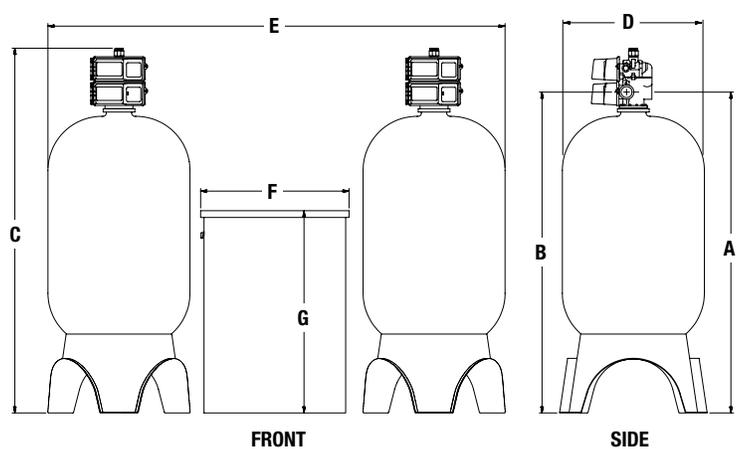
For all other guideline information please contact your Watts representative.

## Dimensions - Weights

HC-300 & HCP-300



HCTA-300



**NOTICE**

Dimensional data is for a single mineral tank system ONLY. HCP-300 models are composed of multiple HC-300 systems which can be arranged according to floor space availability. See Space Required in table below for single tank systems and estimate 2 spaces for duplex, three spaces for triplex and 4 spaces for quadplex HCP-300 series systems.

**Series HC-300 & HCP-300**

MODEL NO.	DIMENSIONS												WEIGHT lbs		
	A		B		C		D		E		F			G	
	mm	in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		in.	mm
M4110B-39NT	79 <sup>7</sup> / <sub>16</sub>	2017	79 <sup>7</sup> / <sub>16</sub>	2017	95 <sup>1</sup> / <sub>4</sub>	2419	24 <sup>1</sup> / <sub>2</sub>	622	28 <sup>5</sup> / <sub>8</sub>	733	30	762	50	1270	1070
M4112B-39NT	81 <sup>7</sup> / <sub>16</sub>	2068	81 <sup>7</sup> / <sub>16</sub>	2068	96 <sup>3</sup> / <sub>4</sub>	2457	30 <sup>1</sup> / <sub>8</sub>	765	31 <sup>3</sup> / <sub>8</sub>	797	39	991	48	1219	1600
M4114B-39NT	87 <sup>1</sup> / <sub>4</sub>	2216	87 <sup>1</sup> / <sub>4</sub>	2216	101	2565	36 <sup>1</sup> / <sub>8</sub>	917	36 <sup>1</sup> / <sub>8</sub>	917	39	991	60	1524	2015
M4116B-39NT	95 <sup>1</sup> / <sub>4</sub>	2419	95 <sup>1</sup> / <sub>4</sub>	2419	108	2743	44	1118	44	1118	42	1067	60	1524	3245
M4118B-39NT	99 <sup>5</sup> / <sub>8</sub>	2530	99 <sup>5</sup> / <sub>8</sub>	2530	112 <sup>3</sup> / <sub>8</sub>	2854	50 <sup>3</sup> / <sub>8</sub>	1280	50 <sup>3</sup> / <sub>8</sub>	1280	50	1270	60	1524	4295

**Series HCTA-300**

MODEL NO.	DIMENSIONS												WEIGHT lbs		
	A		B		C		D		E		F			G	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		in.	mm
M4110TA-39NT	79 <sup>7</sup> / <sub>16</sub>	2017	79 <sup>7</sup> / <sub>16</sub>	2017	95 <sup>1</sup> / <sub>4</sub>	2419	24 <sup>1</sup> / <sub>2</sub>	622	85	2159	30	762	50	1270	2070
M4112TA-39NT	81 <sup>7</sup> / <sub>16</sub>	2068	81 <sup>7</sup> / <sub>16</sub>	2068	96 <sup>3</sup> / <sub>4</sub>	2457	30 <sup>1</sup> / <sub>8</sub>	765	100	2540	39	991	48	1219	3000
M4114TA-39NT	87 <sup>1</sup> / <sub>4</sub>	2216	87 <sup>1</sup> / <sub>4</sub>	2216	101	2565	36 <sup>1</sup> / <sub>8</sub>	917	111	2819	39	991	60	1524	4015
M4116TA-39NT	95 <sup>1</sup> / <sub>4</sub>	2419	95 <sup>1</sup> / <sub>4</sub>	2419	108	2743	44	1118	126	3200	42	1067	60	1524	6245
M4118TA-39NT	99 <sup>5</sup> / <sub>8</sub>	2530	99 <sup>5</sup> / <sub>8</sub>	2530	112 <sup>3</sup> / <sub>8</sub>	2854	50 <sup>3</sup> / <sub>8</sub>	1280	150	3810	50	1270	60	1524	8295

**NOTICE**

Service gpm is for a single mineral tank system ONLY.  
For HCP-300 Series systems, you will need to multiply the Service gpm by (x2) for Duplex, (x3) for Triplex and (x4) for Quadplex systems.

**Specifications**

MODEL NO.	MINERAL TANK			BRINE TANK		SOFTENING CAPACITY		LBS. SALT PER REGENERATION		FLOW RATE & PRESSURE		
	TANK SIZE	RESIN FT <sup>3</sup>	GRAVEL	TANK SIZE	SALT FILL	MAX	MIN	MAX	MIN	SERV GPM	DROP PSI	BKW GPM
	M4110B-39NT	24" X 72"	10	200 lbs.	30" X 50"	1400	300 K	200 K	150	60	120/170	15/25
M4112B-39NT	30" X 72"	15	400 lbs.	39" X 48"	2200	450 K	300 K	225	90	158/212	15/25	25
M4114B-39NT	36" X 72"	20	500 lbs.	39" X 60"	2700	600 K	400 K	300	120	185/250	15/25	35
M4116B-39NT	42" X 72"	30	700 lbs.	42" X 60"	3100	900 K	600 K	450	180	200/268	15/25	45
M4118B-39NT	48" X 72"	35	900 lbs.	50" X 60"	4500	1050 K	700 K	525	210	213/280	15/25	60

**Ordering Information for 3" Simplex (HC-300) and Duplex Alternating (HCTA-300) Softeners**

MODEL NO.	ORDERING CODE	DESCRIPTION	SPACE REQUIRED D X W X H	WEIGHT LBS
M4110B-39NT	68105467	10 Cubic Foot 3" Simplex Softener with Flow Meter	39" X 74" X 103"	1070
M4112B-39NT	68105480	15 Cubic Foot 3" Simplex Softener with Flow Meter	39" X 77" X 107"	1600
M4114B-39NT	68105493	20 Cubic Foot 3" Simplex Softener with Flow Meter	39" X 81" X 109"	2015
M4116B-39NT	68105504	30 Cubic Foot 3" Simplex Softener with Flow Meter	42" X 90" X 117"	3245
M4118B-39NT	68105516	35 Cubic Foot 3" Simplex Softener with Flow Meter	50" X 104" X 117"	4295
M4110TA-39NT	68105473	10 Cubic Foot 3" Duplex Alternating Softener with Flow Meter	39" X 100" X 103"	2070
M4112TA-39NT	68105486	15 Cubic Foot 3" Duplex Alternating Softener with Flow Meter	39" X 117" X 107"	3000
M4114TA-39NT	68105498	20 Cubic Foot 3" Duplex Alternating Softener with Flow Meter	39" X 129" X 109"	4015
M4116TA-39NT	68105509	30 Cubic Foot 3" Duplex Alternating Softener with Flow Meter	42" X 144" X 117"	6245
M4118TA-39NT	68105523	35 Cubic Foot 3" Duplex Alternating Softener with Flow Meter	50" X 164" X 117"	8295

## Ordering Information for 3" Duplex Progressive (HCP-300) Softeners

MODEL NO.	ORDERING CODE	DESCRIPTION	SPACE REQUIRED D X W X H	WEIGHT LBS
M4110TI-NH	68105475	10 Cubic Foot 3" Progressive Duplex Softener with Flow Meters	59" x 82" x 106"	2140
M4112TI-NH	68105488	15 Cubic Foot 3" Progressive Duplex Softener with Flow Meters	74" x 92" x 107"	3200
M4114TI-NH	68105500	20 Cubic Foot 3" Progressive Duplex Softener with Flow Meters	80" x 98" x 111"	4030
M4116TI-NH	68105511	30 Cubic Foot 3" Progressive Duplex Softener with Flow Meters	90" x 100" x 118"	6490
M4118TI-NH	68105525	35 Cubic Foot 3" Progressive Duplex Softener with Flow Meters	106" x 114" x 123"	8590

## Ordering Information for 3" Triplex Progressive (HCP-300) Softeners

MODEL NO.	ORDERING CODE	DESCRIPTION	SPACE REQUIRED D X W X H	WEIGHT LBS
M4110TR-NH	68105477	10 Cubic Foot 3" Progressive Triplex Softener with Flow Meters	59" x 131" x 106"	3210
M4112TR-NH	68105490	15 Cubic Foot 3" Progressive Triplex Softener with Flow Meters	74" x 137" x 107"	4800
M4114TR-NH	68105502	20 Cubic Foot 3" Progressive Triplex Softener with Flow Meters	80" x 147" x 111"	6045
M4116TR-NH	68105513	30 Cubic Foot 3" Progressive Triplex Softener with Flow Meters	90" x 150" x 118"	9735
M4118TR-NH	68105527	35 Cubic Foot 3" Progressive Triplex Softener with Flow Meters	106" x 171" x 123"	12885

## Ordering Information for 3" Quadplex Progressive (HCP-300) Softeners

MODEL NO.	ORDERING CODE	DESCRIPTION	SPACE REQUIRED D X W X H	WEIGHT LBS
M4110QD-NH	68105471	10 Cubic Foot 3" Progressive Quadplex Softener with Flow Meters	59" x 175" x 106"	4280
M4112QD-NH	68105484	15 Cubic Foot 3" Progressive Quadplex Softener with Flow Meters	74" x 180" x 107"	6400
M4114QD-NH	68105496	20 Cubic Foot 3" Progressive Quadplex Softener with Flow Meters	80" x 190" x 111"	8060
M4116QD-NH	68105507	30 Cubic Foot 3" Progressive Quadplex Softener with Flow Meters	90" x 200" x 118"	12980
M4118QD-NH	68105521	35 Cubic Foot 3" Progressive Quadplex Softener with Flow Meters	106" x 228" x 123"	17180

**Notes:** 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

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.



**USA:** T: (800) 659-8400 • F: (800) 659-8402 • Watts.com  
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