

## Engineering Specification

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

Contractor \_\_\_\_\_

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

Approval \_\_\_\_\_

Engineer \_\_\_\_\_

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

Approval \_\_\_\_\_

Representative \_\_\_\_\_

# Series HCTA-200-PPSM and HCP-200-PPSM Commercial Water Softening Systems

**Connection Size: 2" to 4"**

**Flow Rates: Up to 420 gpm (1590 lpm)**

Watts Series HCTA-200-PPSM and HCP-200-PPSM water softening systems are pre-engineered, pre-plumbed, and skid mounted for simplified installations. Duplex alternating and 2-4 tank parallel systems are available. Parallel systems include progressive flow demand unit staging to accommodate wide variances in flow rate. All systems come standard with no hard water bypass pistons, powder coated steel skids, and schedule 80 PVC pre-plumbed inlet, outlet and drain headers. These systems are highly efficient conventional cation exchange type water softeners that are suitable for continuous flow applications ranging from 150,000 to 600,000 grains of hardness removal per tank and flow rates up to 420 gpm (1590 lpm). Regeneration is meter demand initiated. All cycles of regeneration are fully automatic.

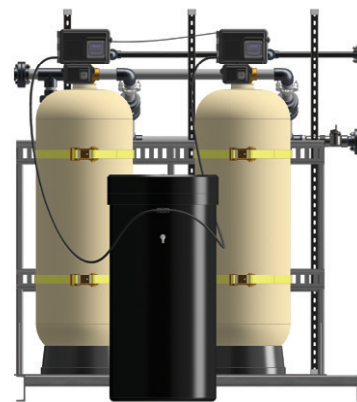
Watts Series HCTA-200-PPSM and HCP-200-PPSM water softeners are designed for point of use or point of entry applications where the benefits of softened water are required. These systems exchange scale-forming calcium and magnesium ions with non scale-forming sodium ions to create soft water for a variety of applications.

Steam boiler make up water, water heater pretreatment, reverse osmosis pretreatment, cooling tower make up water, sterilizer make up water, as well as domestic water softening for hotel, hospital and institutional facilities are all common applications for the Watts Series HCTA-200-PPSM and HCP-200-PPSM water softeners. Watts Series HCP-200-PPSM, with flow demand unit staging, is ideal for commercial and industrial applications where high flow and high capacities are required to accommodate wide variances in flow rates.

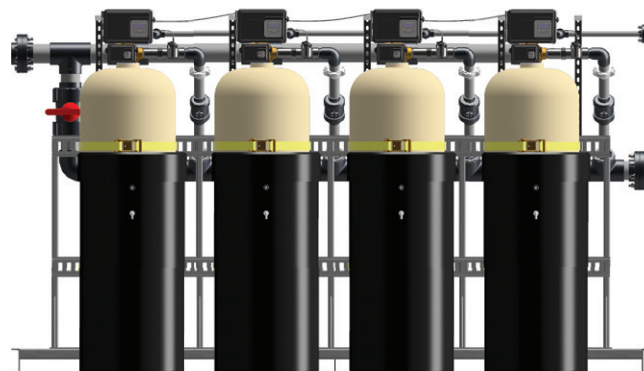
Softened water provides a wide variety of benefits such as preventing lime scale formation in pipes, valves, water heating equipment, heat exchangers, and cooling towers to reducing mineral build up in areas that see excessive splashing such as food preparation counters and sink areas. Softened water 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

- Pre-plumbed and skid mounted for ease of installation
- Schedule 80 PVC inlet, outlet and drain headers with inlet and outlet isolation valves for each tank and system bypass valve
- Powder coated steel skid with tank and plumbing support structure
- Pre-engineered Twin Duplex Alternating (TA), Twin Interlocked (TI), Triplex (TR) and Quadplex (QD) configurations
- Models for capacities to 600,000 grains per tank
- Flow demand staging available on HCP-200-PPSM TI, TR and QD models
- Each mineral tank has its own brine tank on HCP-200-PPSM TI, TR and QD models
- Durable and user friendly 2" lead free brass control valves for high flow rates
- No hard water bypass pistons standard on all systems
- All systems have stainless steel in-line flow meters
- 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 HCTA-200-PPSM Twin Alternating



Series HCP-200-PPSM Quadplex

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.



## HCP-200-PPSM Features

- Easily select duplex, triplex or quadplex systems with flow demand staging
- Model for capacities up to 600,000 grains per tank
- Pre-engineered systems with up to 4 tanks in parallel for flow rates up to 420 GPM
- 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

## 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

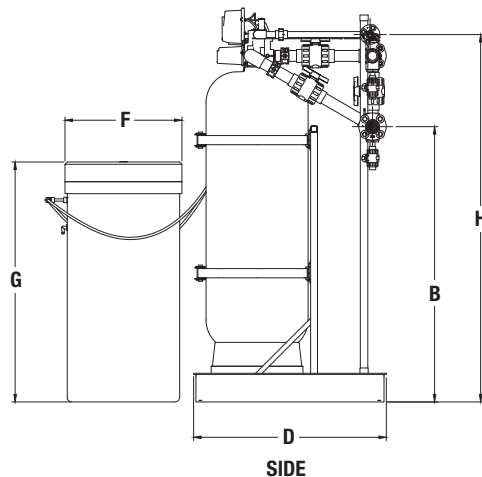
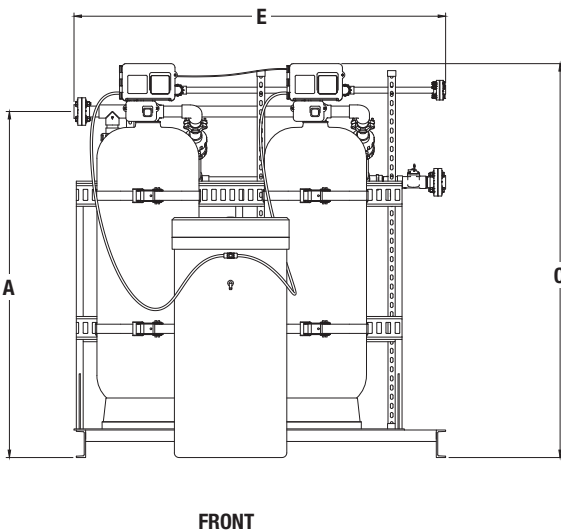
A Watts Series [HCTA-200-PPSM] [HCP-200-PPSM] Model # [ ] water softening system shall be installed on the building's main water line just after it enters the building. The installation point shall be after any backflow prevention or pressure regulating valves. Other installation options are to install 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. The system shall be factory pre-plumbed with Schedule 80 PVC plumbing and skid mounted.

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.

## Dimensions - Weights

Series HCTA-200-PPSM Duplex Alternating



## Feed Water Guidelines

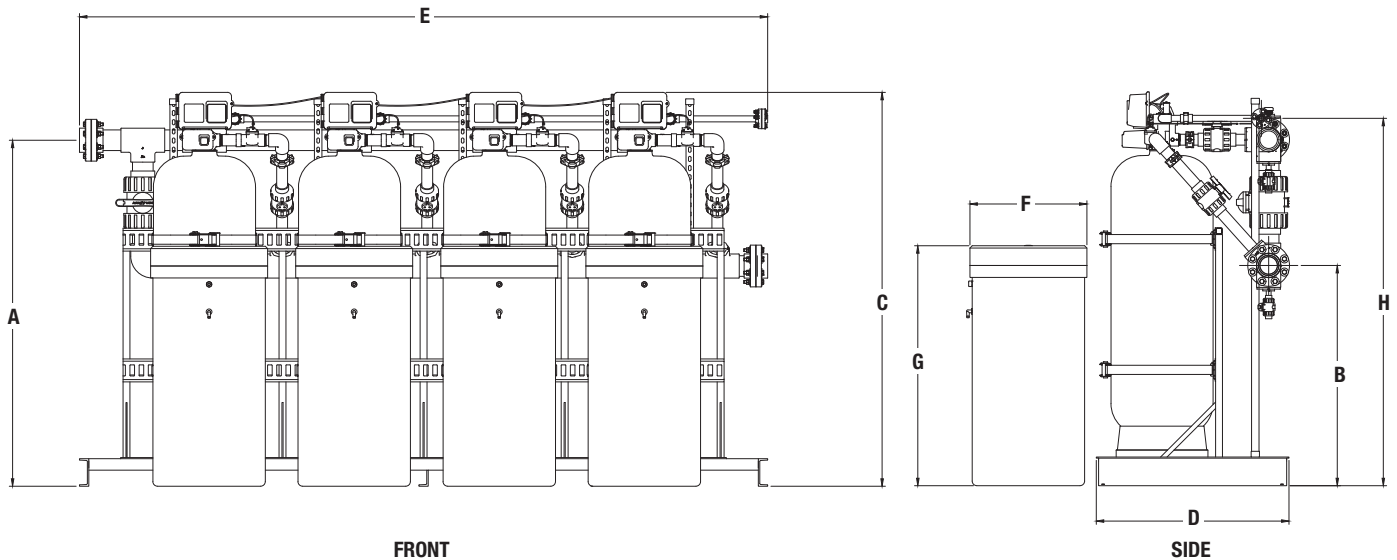
pH	6 to 10
Hardness (maximum)	Depends on customer's acceptable hardness leakage level.
Water Pressure	25psi to 125psi (171 kPa to 8.5 bar)
Temperature	34 - 110°F (1 - 43°C)
Free Chlorine (maximum)	1mg/L
Iron (maximum)	1mg/L
Oil and H <sub>2</sub> S	None Allowed
Turbidity	Less than 5.0 NTU
Total Dissolved 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.

**⚠ WARNING**

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

**Series HCP-200-PPSM Duplex, Triplex and Quadplex Progressive**



**Series HCTA-200-PPSM Duplex Alternating**

MODEL NO.	DIMENSIONS														WEIGHTS			
	A		B		C		D		E		F		G		H		lbs.	kgs.
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
M4048TA-PPSM	72½	1842	57	1448	87	2210	42	1067	82	2083	24	610	41	1041	77	1956	1700	773
M4052TA-PPSM	75½	1918	60	1524	90	2286	42	1068	82	2083	24	610	50	1270	80	2032	2100	955
M4058TA-PPSM	78½	1994	63	1600	95	2413	42	1067	82	2083	30	762	50	1270	83	2108	2200	1000
M4059TA-PPSM	84½	2146	69	1753	100	2540	48	1219	102	2591	39	991	48	1219	89	2261	3450	1568
M4060TA-PPSM	90	2286	75	1905	100	2540	48	1219	102	2591	39	991	60	1524	95	2413	4250	1932

**Series HCP-200-PPSM Duplex Progressive**

MODEL NO.	DIMENSIONS														WEIGHTS			
	A		B		C		D		E		F		G		H		lbs.	kgs.
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
M4048TI-PPSM	72½	1842	57	1448	87	2210	42	1067	82	2083	24	610	41	1041	77	1956	1700	773
M4052TI-PPSM	75½	1918	60	1524	90	2286	42	1068	82	2083	24	610	50	1270	80	2032	2100	955
M4058TI-PPSM	78½	1994	63	1600	95	2413	42	1067	82	2083	30	762	50	1270	83	2108	2320	1055
M4059TI-PPSM	84½	2146	69	1753	100	2540	48	1219	102	2591	39	991	48	1219	89	2261	3520	1600
M4060TI-PPSM	90	2286	75	1905	100	2540	48	1219	102	2591	39	991	60	1524	95	2413	4350	1977

**Series HCP-200-PPSM Triplex Progressive**

MODEL NO.	DIMENSIONS														WEIGHTS			
	A		B		C		D		E		F		G		H		lbs.	kgs.
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
M4048TR-PPSM	72½	1842	57	1448	87	2210	42	1067	114	2896	24	610	41	1041	77	1956	2450	1114
M4052TR-PPSM	75½	1918	60	1524	90	2286	42	1068	114	2896	24	610	50	1270	80	2032	3050	1386
M4058TR-PPSM	78½	1994	63	1600.2	95	2413	42	1067	114	2896	30	762	50	1270	83	2108	3380	1536
M4059TR-PPSM	84½	2146	69	1752.6	100	2540	48	1219	114	2896	39	991	48	1219	89	2261	4780	2173
M4060TR-PPSM	90	2286	75	1905	100	2540	48	1219	114	2896	39	991	60	1524	95	2413	5980	2718

**Series HCP-200-PPSM Quadplex Progressive**

MODEL NO.	DIMENSIONS														WEIGHTS			
	A		B		C		D		E		F		G		H		lbs.	kgs.
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
M4048QD-PPSM	72½	1842	57	1448	87	2210	42	1067	150	3810	24	610	41	1041	77	1956	3100	1409
M4052QD-PPSM	75½	1918	60	1524	90	2286	42	1068	150	3810	24	610	50	1270	80	2032	3850	1750
M4058QD-PPSM	78½	1994	63	1600	95	2413	42	1067	150	3810	30	762	50	1270	83	2108	4290	1950
M4059QD-PPSM	84½	2146	69	1753	100	2540	48	1219	150	3810	39	991	48	1219	89	2261	6090	2768
M4060QD-PPSM	90	2286	75	1905	100	2540	48	1219	150	3810	39	991	60	1524	95	2413	7690	3496

## Specifications

MODEL NO.	GRAIN CAPACITY PER TANK (MAX)	MAIN HEADERS - DRAIN PIPE SIZE (IN.)	NO. OF TANKS - METERS	MINERAL TANK		BRINE TANK		FLOW RATE & PRESSURE		
				TANK SIZE	RESIN Ft <sup>3</sup> PER TANK	NO.- SIZE	SALT FILL (LBS)	SERVICE (GPM)	DROP (PSI)	BKW (GPM)
M4048TA-PPSM	150,000	2-1	2-1	18" x 65"	5	1- 24" x 41"	600	57-65	15-25	10
M4048TI-PPSM	150,000	3-1	2-2	18" x 65"	5	2- 24" x 41"	1200	114-130	15-25	10
M4048TR-PPSM	150,000	3-1	3-3	18" x 65"	5	3- 24" x 41"	1800	171-195	15-25	10
M4048QD-PPSM	150,000	4-1	4-4	18" x 65"	5	4- 24" x 41"	2400	228-260	15-25	10
M4052TA-PPSM	210,000	2-1	2-1	21" x 62"	7	1- 24" x 50"	800	60-77	15-25	12
M4052TI-PPSM	210,000	3-1	2-2	21" x 62"	7	2- 24" x 50"	1600	120-154	15-25	12
M4052TR-PPSM	210,000	3-1	3-3	21" x 62"	7	3- 24" x 50"	2400	180-231	15-25	12
M4052QD-PPSM	210,000	4-1	4-4	21" x 62"	7	4- 24" x 50"	3200	240-308	15-25	12
M4058TA-PPSM	300,000	2-1	2-1	24" x 72"	10	1- 30" x 50"	1200	74-97	15-25	15
M4058TI-PPSM	300,000	3-1	2-2	24" x 72"	10	2- 30" x 50"	2400	148-194	15-25	15
M4058TR-PPSM	300,000	4-1	3-3	24" x 72"	10	3- 30" x 50"	3600	222-291	15-25	15
M4058QD-PPSM	300,000	4-1	4-4	24" x 72"	10	4- 30" x 50"	4800	296-388	15-25	15
M4059TA-PPSM	450,000	2-1	2-1	30" x 72"	15	1- 39" x 48"	2200	80-100	15-25	25
M4059TI-PPSM	450,000	3-1	2-2	30" x 72"	15	2- 39" x 48"	4400	160-200	15-25	25
M4059TR-PPSM	450,000	4-1	3-3	30" x 72"	15	3- 39" x 48"	6600	240-300	15-25	25
M4059QD-PPSM	450,000	4-1	4-4	30" x 72"	15	4- 39" x 48"	8800	320-400	15-25	25
M4060TA-PPSM	600,000	2-1½	2-1	36" x 72"	20	1- 39" x 60"	2200	84-105	15-25	35
M4060TI-PPSM	600,000	3-1½	2-2	36" x 72"	20	2- 39" x 60"	4400	168-210	15-25	35
M4060TR-PPSM	600,000	4-1½	3-3	36" x 72"	20	3- 39" x 60"	6600	252-315	15-25	35
M4060QD-PPSM	600,000	4-1½	4-4	36" x 72"	20	4- 39" x 60"	8800	336-420	15-25	35

## Ordering Information for Skid Mounted Pre-Plumbed Duplex Alternating HCTA-200-PPSM Softeners

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED	SHIPPING WEIGHT
			D X W X H	LBS
M4048TA-PPSM	68110283	5 Cubic Foot Duplex Alternating Skid Mounted Softener with Flow Meter	74" x 82" x 90"	1700
M4052TA-PPSM	68105421	7 Cubic Foot Duplex Alternating Skid Mounted Softener with Flow Meter	74" x 82" x 90"	2100
M4058TA-PPSM	68105436	10 Cubic Foot Duplex Alternating Skid Mounted Softener with Flow Meter	80" x 82" x 95"	2200
M4059TA-PPSM	68105449	15 Cubic Foot Duplex Alternating Skid Mounted Softener with Flow Meter	95" x 102" x 100"	3450
M4060TA-PPSM	68105461	20 Cubic Foot Duplex Alternating Skid Mounted Softener with Flow Meter	95" x 102" x 100"	4250

## Ordering Information for Skid Mounted Pre-Plumbed Duplex Progressive HCP-200-PPSM Softeners

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED	SHIPPING WEIGHT
			D X W X H	LBS
M4048TI-PPSM	68110288	5 Cubic Foot Duplex Progressive Skid Mounted Softener with Flow Meters	74" x 82" x 90"	1700
M4052TI-PPSM	68105423	7 Cubic Foot Duplex Progressive Skid Mounted Softener with Flow Meters	74" x 82" x 90"	2100
M4058TI-PPSM	68105438	10 Cubic Foot Duplex Progressive Skid Mounted Softener with Flow Meters	80" x 82" x 95"	2320
M4059TI-PPSM	68105451	15 Cubic Foot Duplex Progressive Skid Mounted Softener with Flow Meters	95" x 102" x 100"	3520
M4060TI-PPSM	68105463	20 Cubic Foot Duplex Progressive Skid Mounted Softener with Flow Meters	95" x 102" x 100"	4350

## Ordering Information for Skid Mounted Pre-Plumbed Triplex Progressive HCP-200-PPSM Softeners

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED	SHIPPING WEIGHT
			D X W X H	LBS
M4048TR-PPSM	68110287	5 Cubic Foot Triplex Progressive Skid Mounted Softener with Flow Meters	74" x 114" x 90"	2450
M4052TR-PPSM	68105425	7 Cubic Foot Triplex Progressive Skid Mounted Softener with Flow Meters	74" x 114" x 90"	3050
M4058TR-PPSM	68105440	10 Cubic Foot Triplex Progressive Skid Mounted Softener with Flow Meters	80" x 114" x 95"	3380
M4059TR-PPSM	68105453	15 Cubic Foot Triplex Progressive Skid Mounted Softener with Flow Meters	95" x 133" x 100"	4780
M4060TR-PPSM	68105465	20 Cubic Foot Triplex Progressive Skid Mounted Softener with Flow Meters	95" x 133" x 100"	5980

## Ordering Information for Skid Mounted Pre-Plumbed Quadplex Progressive HCP-200-PPSM Softeners

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED	SHIPPING WEIGHT
			D X W X H	LBS
M4048QD-PPSM	68110286	5 Cubic Foot Quadplex Progressive Skid Mounted Softener with Flow Meters	74" x 150" x 90"	3100
M4052QD-PPSM	68105418	7 Cubic Foot Quadplex Progressive Skid Mounted Softener with Flow Meters	74" x 150" x 90"	3850
M4058QD-PPSM	68105434	10 Cubic Foot Quadplex Progressive Skid Mounted Softener with Flow Meters	80" x 150" x 95"	4290
M4059QD-PPSM	68105447	15 Cubic Foot Quadplex Progressive Skid Mounted Softener with Flow Meters	95" x 180" x 100"	6090
M4060QD-PPSM	68105459	20 Cubic Foot Quadplex Progressive Skid Mounted Softener with Flow Meters	95" x 180" x 100"	7690

**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 resin quantities expressed above are per mineral tank. For Series HCP-200-PPSM systems, service flow rates are stated with all mineral tanks in service. During regeneration, the overall system service flow rate will be reduced by a factor of one mineral tank and must be sized accordingly. 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.



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