

Engineering Specification

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

Series PWS30-2-PPSM & PWS30-P-PPSM

Commercial Water Softening Systems

Connection Size: 3" to 6"

Flow Rates: Up to 1120 gpm (4239 lpm)

Watts Pure Water Series PWS30-2-PPSM and PWS30-P-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 300,000 to 1,050,000 grains of hardness removal per tank and flow rates up to 1120 gpm (4239 lpm). Regeneration is meter demand initiated. All cycles of regeneration are fully automatic.

Watts Pure Water Series PWS30-2-PPSM and PWS30-P-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.

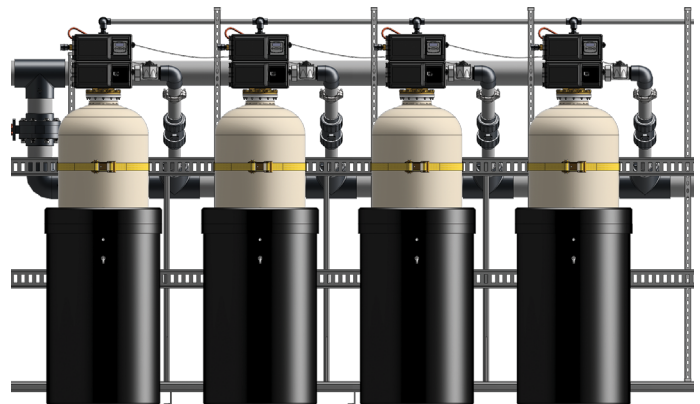
Steam boiler makeup water, water heater pretreatment, reverse osmosis pretreatment, cooling tower makeup water, sterilizer makeup water, as well as domestic water softening for hotel, hospital and institutional facilities are all common applications for the Watts Pure Water Series PWS30-2-PPSM and PWS30-P-PPSM water softeners. Watts Pure Water Series PWS30-P-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 buildup 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.

WATTS®
pure water



Series PWS30-2-PPSM Duplex Alternating



Series PWS30-P-PPSM Quadplex

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.

Final system selection and installation must be performed by qualified professionals based on site-specific conditions.

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 Duplex Alternating, Duplex, Triplex and Quadplex configurations
- Models for capacities to 1,050,000 grains per tank
- Durable and user friendly 3" 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
- Sophisticated digital electronic controls that store operating history that can be accessed by the user
- Fully adjustable regeneration cycles
- Dry contact lockout switch for remote interface is standard
- High capacity resin certified to NSF/ANSI/CAN 61 for material safety and to NSF/ANSI/CAN 372 for lead free compliance standards
- Highly corrosion resistant fiberglass tanks
- Durable polypropylene lower distribution system

PWS30-P-PPSM Features

- Easily select duplex, triplex or quadplex systems with flow demand staging
- Model for capacities up to 1,050,000 grains per tank
- Pre-engineered systems with up to 4 tanks in parallel for flow rates up to 1120 GPM
- Each softening vessel comes complete with brine tank and meter

Specifications

A Watts Pure Water Series PWS30-2-PPSM and PWS30-P-PPSM 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 makeup 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 shutdown 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.

Feed Water Guidelines

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

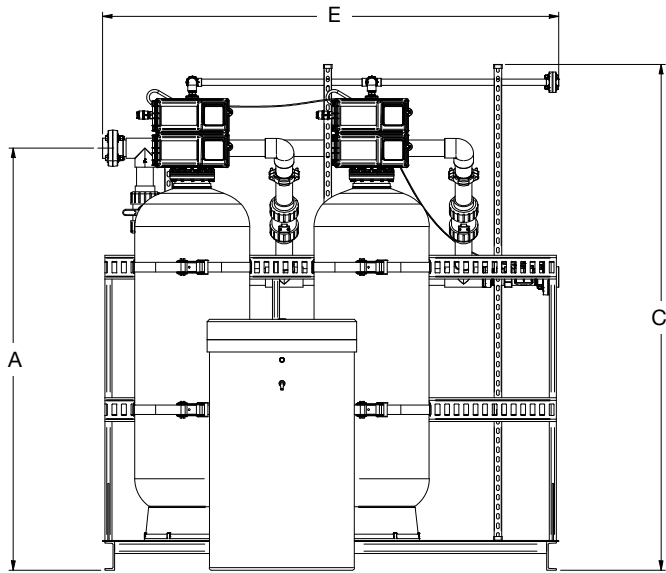
For all guideline information please contact your Watts representative.

 **WARNING**

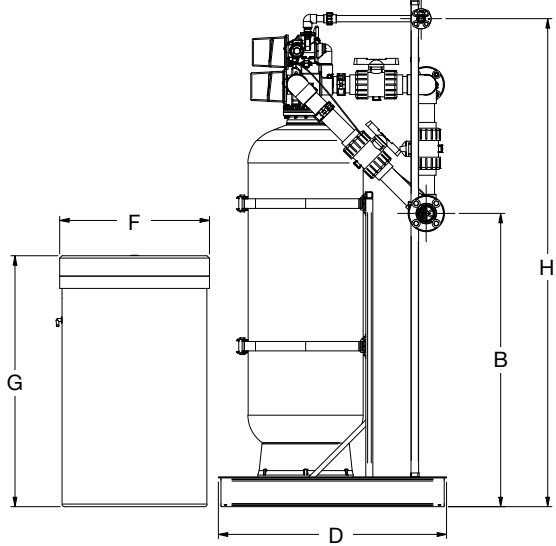
Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

Dimensions - Weights

Series PWS30-2-PPSM

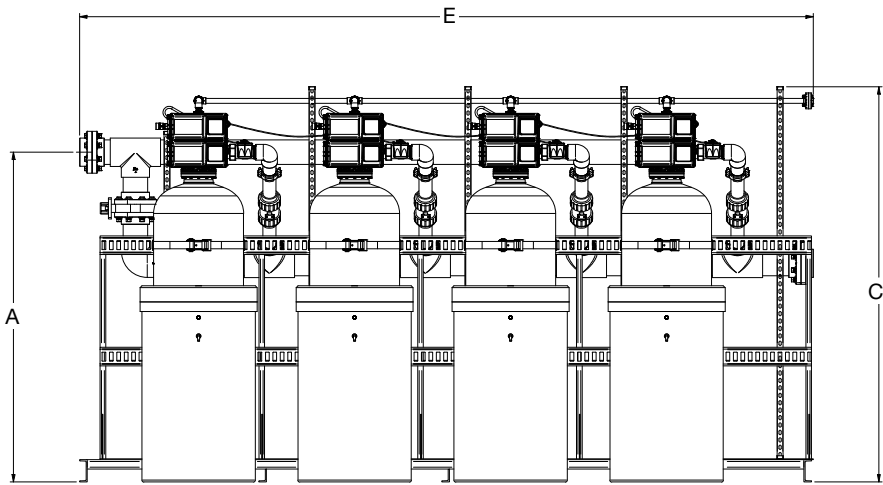


Front

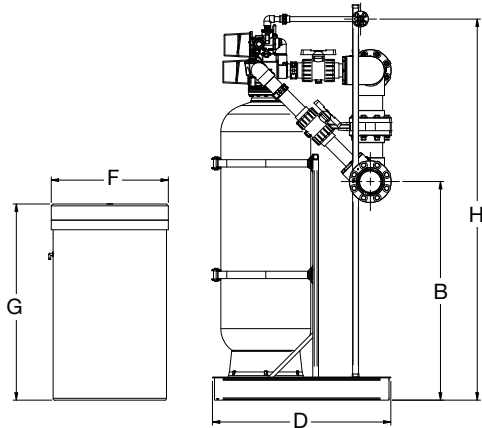


Side

Series PWS30-P-PPSM



Front



Side

Call customer service if you need assistance with technical details.

Series PWS30-2-PPSM Duplex Alternating

MODEL	DIMENSIONS																SHIPPING WT.	
	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		
PWS30151H21-PPSM	89	2261	59	1499	107	2718	48	1219	96	2438	30	762	50	1270	3300	1500	3300	1500
PWS30151I21-PPSM	98	2489	68	1727	116	2946	48	1219	108	2743	39	991	48	1219	4230	1923	4230	1923
PWS30151J21-PPSM	101	2565	71	1803	119	3023	51	1295	108	2743	39	991	60	1524	5250	2386	5250	2386
PWS30151K21-PPSM	110	2794	80	2032	128	3251	60	1524	120	3048	42	1067	60	1524	7880	3582	7880	3582
PWS30151L21-PPSM	110	2794	80	2032	128	3251	63	1600	120	3048	50	1270	60	1524	9930	4514	9930	4514

Series PWS30-P-PPSM Duplex Progressive

MODEL	DIMENSIONS														SHIPPING WT.			
	A		B		C		D		E		F		G		H			
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
PWS30151H22-PPSM	89	2261	59	1499	107	2718	48	1219	108	2743	30	762	50	1270	3420	1555	3420	1555
PWS30151I22-PPSM	98	2489	68	1727	116	2946	48	1219	108	2743	39	991	48	1219	4480	2036	4480	2036
PWS30151J22-PPSM	101	2565	71	1803	119	3023	51	1295	108	2743	39	991	60	1524	5310	2414	5310	2414
PWS30151K22-PPSM	110	2794	80	2032	128	3251	60	1524	120	3048	42	1067	60	1524	8230	3741	8230	3741
PWS30151L22-PPSM	110	2794	80	2032	128	3251	63	1600	132	3353	50	1270	60	1524	10330	4695	10330	4695

Series PWS30-P-PPSM Triplex Progressive

MODEL	DIMENSIONS																SHIPPING WT.	
	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		
PWS30151H33-PPSM	89	2261	59	1499	107	2718	48	1219	144	3658	30	762	50	1270	5030	2286	5030	2286
PWS30151I33-PPSM	98	2489	68	1727	116	2946	48	1219	156	3962	39	991	48	1219	6620	3009	6620	3009
PWS30151J33-PPSM	101	2565	71	1803	119	3023	51	1295	156	3962	39	991	60	1524	7860	3573	7860	3573
PWS30151K33-PPSM	110	2794	80	2032	128	3251	60	1524	180	4572	42	1067	60	1524	12230	5559	12230	5559
PWS30151L33-PPSM	110	2794	80	2032	128	3251	63	1600	180	4572	50	1270	60	1524	15380	6991	15380	6991

Series PWS30-P-PPSM Quadplex Progressive

MODEL	DIMENSIONS																SHIPPING WT.	
	A		B		C		D		E		F		G		H			
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
PWS30151H44-PPSM	89	2261	59	1499	107	2718	48	1219	198	5029	30	762	50	1270	6770	3077	6770	3077
PWS30151I44-PPSM	98	2489	68	1727	116	2946	48	1219	202	5131	39	991	48	1219	8890	4041	8890	4041
PWS30151J44-PPSM	101	2565	71	1803	119	3023	51	1295	204	5182	39	991	60	1524	10550	4795	10550	4795
PWS30151K44-PPSM	110	2794	80	2032	128	3251	60	1524	240	6096	42	1067	60	1524	16230	7377	16230	7377
PWS30151L44-PPSM	110	2794	80	2032	128	3251	63	1600	240	6096	50	1270	60	1524	20430	9286	20430	9286

Specifications

MODEL NO.	GRAIN CAPACITY PER TANK	MAIN HEADERS- DRAIN PIPE SIZE (IN)	NO. OF TANKS METERS	MINERAL TANK		BRINE TANK		FLOW RATE & PRESSURE		
	(MAX)			TANK SIZE	RESIN FT³ PER TANK	NO. - SIZE	SALT FILL (LBS)	SERVICE (GPM)	DROP (PSI)	BKW (GPM)
PWS30151H21-PPSM	300,000	3-1	2-1	24" x 72"	10	1-30" x 50"	1200	120-170	15-25	15
PWS30151H22-PPSM	300,000	4-1	2-2	24" x 72"	10	2-30" x 50"	2400	240-340	15-25	15
PWS30151H33-PPSM	300,000	4-1	3-3	24" x 72"	10	3-30" x 50"	3600	360-510	15-25	15
PWS30151H44-PPSM	300,000	6-1	4-4	24" x 72"	10	4-30" x 50"	4800	480-680	15-25	15
PWS30151I21-PPSM	450,000	3-1 1/2	2-1	30" x 72"	15	1-39" x 48"	2200	158-212	15-25	25
PWS30151I22-PPSM	450,000	4- 1 1/2	2-2	30" x 72"	15	2-39" x 48"	4400	316-424	15-25	25
PWS30151I33-PPSM	450,000	6- 1 1/2	3-3	30" x 72"	15	3-39" x 48"	6600	474-636	15-25	25
PWS30151I44-PPSM	450,000	6- 1 1/2	4-4	30" x 72"	15	4-39" x 48"	8800	632-848	15-25	25
PWS30151J21-PPSM	600,000	3- 1 1/2	2-1	36" x 72"	20	1-39" x 60"	2700	185-250	15-25	35
PWS30151J22-PPSM	600,000	4- 1 1/2	2-2	36" x 72"	20	2-39" x 60"	5400	370-500	15-25	35
PWS30151J33-PPSM	600,000	6- 1 1/2	3-3	36" x 72"	20	3-39" x 60#	8100	555-750	15-25	35
PWS30151J44-PPSM	600,000	6- 1 1/2	4-4	36" x 72"	20	4-39" x 60"	10800	740-1000	15-25	35
PWS30151K21-PPSM	900,000	3-2	2-1	42" x 72"	30	1-42" x 60"	3100	200-268	15-25	50
PWS30151K22-PPSM	900,000	4-2	2-2	42" x 72"	30	2-42" x 60"	6200	400-536	15-25	50
PWS30151K33-PPSM	900,000	6-2	3-3	42" x 72"	30	3-42" x 60"	9300	600-804	15-25	50
PWS30151K44-PPSM	900,000	6-2	4-4	42" x 72"	30	4-42" x 60"	12400	800-1072	15-25	50
PWS30151L21-PPSM	1,050,000	3-2	2-1	48" x 72"	35	1-50" x 60"	4500	213-280	15-25	60
PWS30151L22-PPSM	1,050,000	6-2	2-2	48" x 72"	35	2-50" x 60"	9000	426-560	15-25	60
PWS30151L33-PPSM	1,050,000	6-2	3-3	48" x 72"	35	3-50" x 60"	13500	639-840	15-25	60
PWS30151L44-PPSM	1,050,000	6-2	4-4	48" x 72"	35	4-50" x 60"	18000	852-1120	15-25	60

Ordering Information for Skid Mounted Pre-Plumbed Duplex Alternating PWS30-2-PPSM

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED D X W X H	SHIPPING WEIGHT LBS
PWS30151H21-PPSM	1000001964	10 Cubic Foot Duplex Alternating Skid Mounted Softener with Flow Meter	86" x 96" x 107"	3300
PWS30151I21-PPSM	1000001968	15 Cubic Foot Duplex Alternating Skid Mounted Softener with Flow Meter	95" x 108" x 116"	4230
PWS30151J21-PPSM	1000001972	20 Cubic Foot Duplex Alternating Skid Mounted Softener with Flow Meter	98" x 108" x 119"	5250
PWS30151K21-PPSM	1000001976	30 Cubic Foot Duplex Alternating Skid Mounted Softener with Flow Meter	110" x 120" x 128"	7880
PWS30151L21-PPSM	1000001980	35 Cubic Foot Duplex Alternating Skid Mounted Softener with Flow Meter	121" x 132" x 128"	9930

Ordering Information for Skid Mounted Pre-Plumbed Duplex Progressive PWS30-P-PPSM

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED D X W X H	SHIPPING WEIGHT LBS
PWS30151H22-PPSM	1000001965	10 Cubic Foot Duplex Progressive Skid Mounted Softener with Flow Meter	86" x 108" x 107"	3420
PWS30151I22-PPSM	1000001969	15 Cubic Foot Duplex Progressive Skid Mounted Softener with Flow Meter	95" x 108" x 116"	4480
PWS30151J22-PPSM	1000001973	20 Cubic Foot Duplex Progressive Skid Mounted Softener with Flow Meter	98" x 108" x 119"	5310
PWS30151K22-PPSM	1000001977	30 Cubic Foot Duplex Progressive Skid Mounted Softener with Flow Meter	110" x 120" x 128"	8230
PWS30151L22-PPSM	1000001981	35 Cubic Foot Duplex Progressive Skid Mounted Softener with Flow Meter	121" x 132" x 128"	10330

Ordering Information for Skid Mounted Pre-Plumbed Triplex Progressive PWS30-P-PPSM

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED D X W X H	SHIPPING WEIGHT LBS
PWS30151H33-PPSM	1000001966	10 Cubic Foot Triplex Progressive Skid Mounted Softener with Flow Meter	86" x 144" x 107"	5030
PWS30151I33-PPSM	1000001970	15 Cubic Foot Triplex Progressive Skid Mounted Softener with Flow Meter	95" x 156" x 116"	6620
PWS30151J33-PPSM	1000001974	20 Cubic Foot Triplex Progressive Skid Mounted Softener with Flow Meter	98" x 156" x 119"	7860
PWS30151K33-PPSM	1000001978	30 Cubic Foot Triplex Progressive Skid Mounted Softener with Flow Meter	110" x 180" x 128"	12230
PWS30151L33-PPSM	1000001982	35 Cubic Foot Triplex Progressive Skid Mounted Softener with Flow Meter	121" x 180" x 128"	15380

Ordering Information for Skid Mounted Pre-Plumbed Quadplex Progressive PWS30-P-PPSM

MODEL NO.	ORDERING CODES	DESCRIPTION	SPACE REQUIRED D X W X H	SHIPPING WEIGHT LBS
PWS30151H44-PPSM	1000001967	10 Cubic Foot Quadplex Progressive Skid Mounted Softener with Flow Meter	86" x 198" x 107"	6770
PWS30151I44-PPSM	1000001971	15 Cubic Foot Quadplex Progressive Skid Mounted Softener with Flow Meter	95" x 202" x 116"	8890
PWS30151J44-PPSM	1000001975	20 Cubic Foot Quadplex Progressive Skid Mounted Softener with Flow Meter	98" x 204" x 119"	10550
PWS30151K44-PPSM	1000001979	30 Cubic Foot Quadplex Progressive Skid Mounted Softener with Flow Meter	110" x 240" x 128"	16230
PWS30151L44-PPSM	1000001983	35 Cubic Foot Quadplex Progressive Skid Mounted Softener with Flow Meter	121" x 240" x 128"	20430

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 PWS30-P-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 25 psi drop are for intermittent peak flow rates and are not to be used as continuous flows.



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