



*Culligan®  
Heavy Duty  
Commercial  
Softener*

*assisted living facilities*

*cafeterias*

*casinos*

*corporate campuses*

*educational facilities*

*food service*

*grocery*

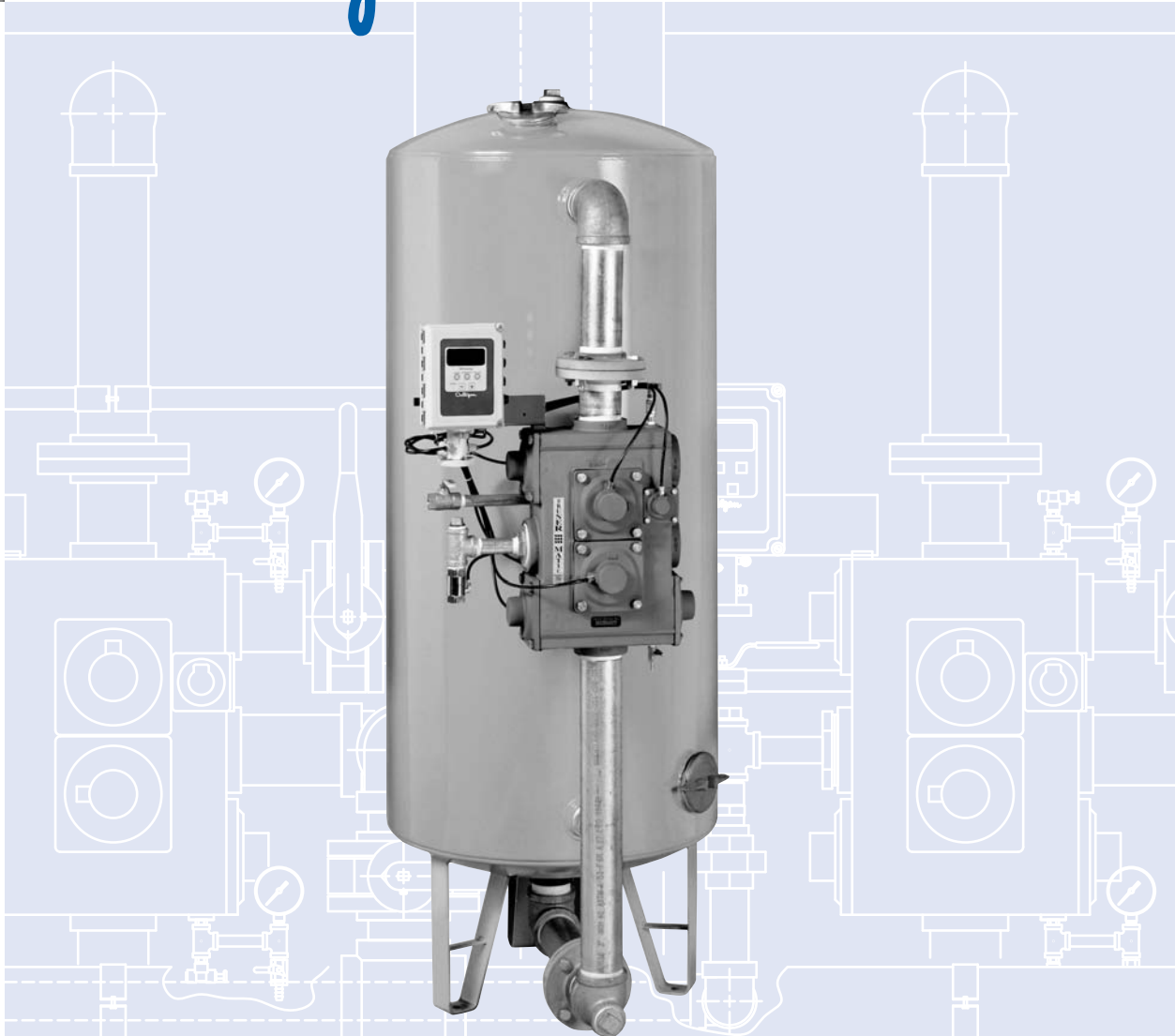
*hotel/hospitality*

*institutions*

*laundry*

*theme parks*

*vehicle wash*



## Culligan Side Mount (CSM™) Heavy Duty Commercial Softener

### Standard Features

- 24 Volt Culligan's MVP Controller – Field programmable with a back-lit LCD display and UL listed 120v/24v transformer.
- Single, Duplex, Triplex, or Quad Configurations – Hardness removal capacities up to 900,000 grains per tank. Continuous flow rates up to 201 gpm per tank.
- Regeneration initiation by choice or combination of time clock, meter or Aqua-Sensor inputs.
- Culligan's Brunermatic® Valve – Guided perimeter designed diaphragm valves are smooth operating and free of water hammer. All valve parts are easily accessible in the multiport design for ease of service.
- Corrosion resistant tanks – Made of low carbon steel with epoxy interior lining and finish coat painted exterior.



# Culligan's CSM™ Commercial Water Softener

## Applications and Benefits

- Educational Facilities—Boiler and cooling tower make-up water for scale reduction and improved energy costs.
- Restaurants—For dishwashing, cleaning material savings, scale reduction.
- RO/DI Pretreatment
- Car washes—Quality results, detergent and water heating savings, scale reduction.
- Apartment buildings, assisted living facilities and hotels—Quality water for laundry, dishwashers, boilers.
- Light industry—For process and make-up water, boiler and cooling system pretreatment, general housekeeping.
- Office buildings—For heating plant pretreatment, tenant convenience, general housekeeping.

## Options

- Culligan's Brine System
- Corrosion resistant construction for long life.
- Adjustable salt dosage.

Skid Mounted—fully pre-piped and wired systems for single point field utility connection of inlet, outlet, drain and power supply.

Patented Progressive Flow – The Culligan's MVP Control can monitor flow demands bringing additional softening tanks on-line or offline as flows increase or decrease.

### ASME Code Tanks

Brine Reclaim – reduces operating costs.

Patented Aqua-Sensor® Control – initiates regeneration only when needed based upon water hardness. Automatically adjusts to changes in raw water hardness and water consumption.

Flow Measuring Devices—are available for direct connection to the MVP controller for volume based regeneration initiation.

Gauge Packages—pressure gauges provided for mounting at the inlet and outlet connection.

## Warranty

Culligan's CSM™ water softeners are backed by a limited 1-year warranty against defects in material, workmanship and corrosion. In addition, softener tanks are warranted for a period of 5 years.\*

\* See printed warranty for details. Culligan will provide a copy of the warranty upon request.

## System Specifications

Pressure:	30–100 psig 210–690 kPa
Power:	24 Volts 50/60hz <sup>1</sup>
Consumption:	3/42 Watts Min/Max
Temperature:	40–120°F 4 - 49°C
Turbidity:	5 NTU, max. <sup>2</sup>
Chlorine:	1 mg/L, max. <sup>2</sup>
Iron:	5 mg/L, max.

<sup>1</sup> 120 Volt/24 Volt CUL/UL listed Transformer Included.

<sup>2</sup> See media specification for details.

The contaminants or other substances removed or reduced by this water treatment device are not necessarily in your water.

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**Culligan**  
Trust the Water Experts®

[www.culligan.com](http://www.culligan.com)™

1-800-CULLIGAN

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MooreWallace PART NO. 46964

Model	Resin Qty. (Ft³)	Pipe Size	Flow Rate Gallons Per Minute		Tank Size***	
			Continuous*	Peak**	Softener	Brine****
150-2	5	2"	67	94	20" x 54"	24" x 48"
210-2	7	2"	76	102	24" x 54"	24" x 48"
300-2	10	2"	84	112	30" x 60"	30" x 48"
300-3	10	3"	152	210	30" x 60"	30" x 48"
450-2	15	2"	79	106	30" x 60"	30" x 48"
450-3	15	3"	135	192	30" x 60"	30" x 48"
600-2	20	2"	94	125	36" x 60"	36" x 48"
600-3	20	3"	183	252	36" x 60"	36" x 48"
750-2	25	2"	97	129	42" x 60"	42" x 48"
750-3	25	3"	201	267	42" x 60"	42" x 48"
900-2	30	2"	96	127	42" x 60"	42" x 48"
900-3	30	3"	193	259	42" x 60"	42" x 48"

\*Flow rate at a 15 psi pressure loss.

\*\*Flow rate at a 25 psi pressure loss.

\*\*\*Dimensions are diameter by tank height.

\*\*\*\*Brine systems are optional.

Flow rates shown are per tank.

Low flow channeling (flow rates less than 0.5 gallons per minute per cubic foot of resin) may cause hardness leakage into effluent.

CSM product formerly sold under the Bruner label.

MVP Controller



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# Culligan®

## *Softeners*

- *Hi-Flo® 2E*
- *CSM*
- *Hi-Flo® 55E*
- *Hi-Flo® 50*

## *Filters*

- *Hi-Flo® 2E*
- *Hi-Flo® 42*
- *CSM*
- *Hi-Flo® 55E*
- *Hi-Flo® 50*

## Introducing the Culligan® MVP Electronic Controller

### *Multifunctional*

- Sequences the regeneration process of water softeners or filtration systems
- Time, Volume, Aqua-Sensor®\* or external device
- Can be used as a simple timer or more complex system integrator

### *Versatile*

- Patented Progressive Flow\*\* feature permits smaller systems to provide greater flow rates and treatment capacities
- Will adapt to many types of water softeners, filters or dealkalizers
- As many as 6 controls may be linked together, allowing for simple, future expansion
- Operates on 24 VAC

### *Programmable*

- Time based regeneration schedule can be interval of days or hours or specific day of week
- Programmable trip point allows multiple units to be brought online or offline as flow demand increases or decreases
- Two auxilliary outputs and one input can be programmed to be active or inactive at any point of the regeneration process.



## Culligan® MVP Designed With The Ease of 24-volt Operation.

corporate campuses  
educational facilities  
food service  
grocery  
hotel/hospitality  
laundry  
vehicle wash

### **Time of Day**

Displays time in 12 hour (AM/PM) or 24 hour formats.

### **EEPROM**

Saves programmed and statistical functions.

### **One-Touch Program Update**

Update multiple controls through the touch of a button on the primary control.

### **Lock/Unlock**

Allows the control to be easily locked out from inadvertent program changes or abuse.

### **Screen Blanking**

Allows the screen to go blank once programming is complete (After 5 minutes of no keypad activity).

### **Power Source**

Electrical power required for the control is 24-volt 50/60 Hz AC current. A plug-in transformer (120v/24v) is provided.

### **Program Beeper**

Emits an audible beep when key pads are depressed to help identify valid (short beep) or invalid (3 short beeps) key pad touches. Can be enabled or disabled as desired.

### **Multi-Unit Communication Input/Output (RS485)**

The communication input/output feature routinely recognizes when another controller within a multiple controller system is in a regeneration sequence, prohibiting the chance of multiple units

## Additional MVP Features

- **Battery Backup** - The optional battery backup will maintain the time of day for a minimum of 4 weeks using a 3.6V 1/2AA-lithium type battery as supplied by Culligan.
- **Regeneration Start Delay** - A user determined number of hours (up to 9) can be input for the purpose of increasing time between multiple regeneration initiations.
- **Auxillary Input** - capable of accepting a remote signal from a dry contact device such as an operator push-button for the purpose of initiating the regeneration sequence.
- **Segmented Brine Draw/Rinse Cycle - Brine Reclaim Capability** - allows the user to configure the system for brine reclaim with a minimum of additional valves and/or other types of hardware.

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MooreWallace PART NO. 46968



\* Aqua-Sensor: Patent # US 5,699,272

\*\* Progressive Flow: Patent # US 5,060,167 , # US 5,351,199

Check for compliance with state and local laws and regulations. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Systems certified for cyst reduction may be used on disinfected waters that may contain filterable cysts.

Culligan, Aqua-Sensor, www.culligan.com and Hey Culligan Man are trademarks of Culligan International Company.



## Automatic Water Softeners

### Specifications and Operating Data

Single Tank Models	Exchange Capacity <sup>1</sup> @ Salt Dosage			Service Flow Rates <sup>2</sup>		Pipe Size	Resin Qty	Softener Tank Size	Brine Tank Size <sup>3</sup>	Approx. Ship. Weight
	Minimum	Standard	Maximum	Peak Flow	Cont. Flow					
	gr @ lb	gr @ lb	gr @ lb	gpm	gpm					
	g @ kg	g @ kg	g @ kg	m <sup>3</sup> /hr	m <sup>3</sup> /hr					
CSM 150-2	100,000/30	125,000/50	150,000/75	94	67	2	5	20 x 54	24 x 48	830
	6,480/13.6	8,100/22.7	9,720/34	21.3	15.2	2	142	508 x 1,372	610 x 1,219	376
CSM 210-2	140,000/42	175,000/70	210,000/105	102	76	2	7	24 x 54	24 x 48	1115
	9,072/19.1	11,340/31.8	13,608/47.6	23.2	17.3	2	198	610 x 1,372	610 x 1,219	506
CSM 300-2	200,000/60	250,000/100	300,000/150	112	84	2	10	30 x 60	30 x 48	1580
	12,960/27.2	16,200/45.4	19,440/68	25.4	19.1	2	283	762 x 1,524	762 x 1,219	717
CSM 300-3	200,000/60	250,000/100	300,000/150	210	152	3	10	30 x 60	30 x 48	1630
	12,960/27.2	16,200/45.4	19,440/68	47.7	34.5	3	283	762 x 1,524	762 x 1,219	739
CSM 450-2	300,000/90	375,000/150	450,000/225	106	79	2	15	30 x 60	30 x 48	1940
	19,440/40.8	24,300/68	29,160/102	24.1	17.9	2	425	762 x 1,524	762 x 1,219	880
CSM 450-3	300,000/90	375,000/150	450,000/225	192	135	3	15	30 x 60	30 x 48	1990
	19,440/40.8	24,300/68	29,160/102	43.6	30.6	3	425	762 x 1,524	762 x 1,219	903
CSM 600-2	400,000/120	500,000/200	600,000/300	125	94	2	20	36 x 60	36 x 48	2585
	25,920/54.4	32,400/90.7	38,880/136	28.4	21.3	2	566	914 x 1,524	914 x 1,219	1173
CSM 600-3	400,000/120	500,000/200	600,000/300	252	183	3	20	36 x 60	36 x 48	2635
	25,920/54.4	32,400/90.7	38,880/136	57.2	41.5	3	566	914 x 1,524	914 x 1,219	1195
CSM 750-2	500,000/150	625,000/250	750,000/375	129	97	2	25	42 x 60	42 x 48	3390
	32,400/68	40,500/113	48,600/170	29.3	22	2	708	1,067 x 1,524	1,067 x 1,219	1538
CSM 750-3	500,000/150	625,000/250	750,000/375	267	201	3	25	42 x 60	42 x 48	3440
	32,400/68	40,500/113	48,600/170	60.6	45.6	3	708	1,067 x 1,524	1,067 x 1,219	1560
CSM 900-2	600,000/180	750,000/300	900,000/450	127	96	2	30	42 x 60	42 x 48	3650
	38,880/81.6	48,600/136	58,320/204	28.8	21.8	2	850	1,067 x 1,524	1,067 x 1,219	1656
CSM 900-3	600,000/180	750,000/300	900,000/450	259	193	3	30	42 x 60	42 x 48	3700
	38,880/81.6	48,600/136	58,320/204	58.8	43.8	3	850	1,067 x 1,524	1,067 x 1,219	1678

<sup>1</sup> Exchange capacities based on treating water containing 10 grains per gallon (171 mg/l) of hardness (expressed as calcium carbonate), free of color, oil, turbidity and at a service flow rate of approximately 50 percent of the peak flow rate. These are nominal capacities and will vary with influent water characteristics, water temperature and other factors.

<sup>2</sup> Operation of a softener at peak flow rate for extended periods of time may result in a slight reduction of softening capacity. This is due to premature hardness breakthrough. Peak flow shown is at a 25 psi (172 kPa) pressure loss. Continuous flow shown is at a 15 psi (103 kPa) pressure loss.

<sup>3</sup> Brine system shown is optional. Multiple sizes are available. Size shown is size most often selected for the system.

NOTE: Operational, maintenance and replacement requirements are essential for this product to perform as advertised. Specifications shown are for single models. Also available in multiple tank configurations.



Commercial Systems  
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# Limited WARRANTY

Culligan® Hi-Flo® 2 and 2e Series, Hi-Flo® 52 series, Hi-Flo® 42 Series, Hi-Flo® 55e Series,  
CSM Series and Hi-Flo® 50 Series

You have just purchased one of the finest water conditioners made. As an expression of our confidence in Culligan International Company products, this product is warranted to the original end-user, when installed in accordance with Culligan specifications, against defects in material and workmanship from the date of original installation, as follows:

<b>For a period of ONE YEAR</b>	<b>The entire conditioner.</b>
<b>For a period of TWO YEARS</b>	<b>The control valve internal parts. The brine valve and its component parts. The salt storage container internal components.</b>
<b>For a period of FIVE YEARS</b>	<b>The control valve body, excluding internal parts. The fiberglass wound container(s), if so equipped*. The salt storage container(s), if so equipped. The epoxy-lined steel conditioner tank(s), if so equipped.</b>
<b>For a period of TWELVE YEARS</b>	<b>The conditioner tank, if it contains a plastic liner.</b>

\* The tank must be protected by a vacuum breaker device as described in the unit's operating manual. Damage to the tank caused by vacuum is not covered by this warranty. The unit must be used in operating conditions that conform to Culligan's recommended design guidelines. This warranty will not apply if the unit has been modified, repaired or altered by someone not authorized by Culligan.

If a part described above is found defective within the specified period, you should notify your independently operated Culligan dealer and arrange a time during normal business hours for the dealer to inspect the water conditioner on your premises. Any part found defective within the terms of this warranty will be repaired or replaced by the dealer. You pay only freight from our factory and local dealer charges.

We are not responsible for damage caused by accident, fire, flood, freezing, Act of God, misuse, misapplication, neglect, oxidizing agents (such as chlorine, ozone, chloramines and other related components), alteration, installation or operation contrary to our printed instructions, or by the use of accessories or components which do not meet Culligan specifications, is not covered by this warranty. Refer to the specifications section in the Installation and Operating manual for application parameters.

Our product performance specifications are furnished with each water conditioning unit. TO THE EXTENT PERMITTED BY LAW, CULLIGAN DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE; TO THE EXTENT REQUIRED BY LAW, ANY SUCH IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE ONE-YEAR PERIOD SPECIFIED ABOVE FOR THE ENTIRE CONDITIONER. As a manufacturer, we do not know the characteristics of your water supply or the purpose for which you are purchasing this product. The quality of water supplies may vary seasonally or over a period of time, and your water usage rate may vary as well. Water characteristics can also differ considerably if this product is moved to a new location. For these reasons, we assume no liability for the determination of the proper equipment necessary to meet your requirements, and we do not authorize others to assume such obligations for us. Further, we assume no liability and extend no warranties, express or implied, for the use of this product with a nonpotable water source or a water source which does not meet the conditions for use described in the installation and operation manual(s) that accompany the equipment. OUR OBLIGATIONS UNDER THIS WARRANTY ARE LIMITED TO THE REPAIR OR REPLACEMENT OF THE FAILED PARTS OF THE WATER CONDITIONER, AND WE ASSUME NO LIABILITY WHATSOEVER FOR DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL, GENERAL, OR OTHER DAMAGES.

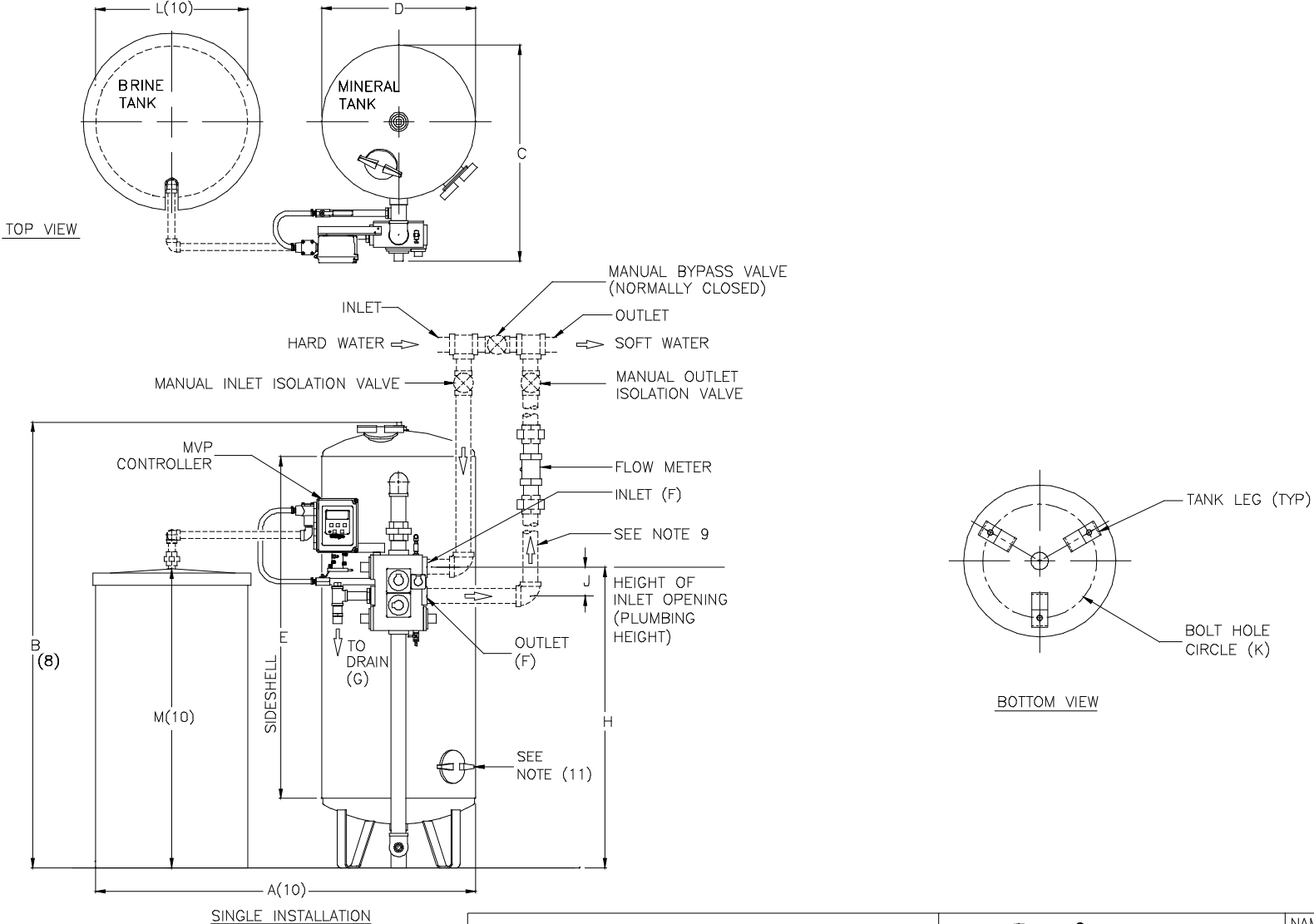
Some states do not allow the exclusion of implied warranties or limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Similarly, some states do not allow the exclusion of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Consult your telephone directory for your local independently operated Culligan dealer, or write Culligan International Company for warranty and service information.


CULLIGAN INTERNATIONAL COMPANY  
One Culligan Parkway  
Northbrook, Illinois 60062

NOTES:

- (1) ITEMS SHOWN IN BROKEN LINES TO BE FURNISHED BY OTHERS.
- (2) ALL DIMENSIONS ARE ± 1 INCH (25mm) AND SUBJECT TO CHANGE WITHOUT NOTICE.
- (3) UNIONS SHOULD BE LOCATED ON INLET AND OUTLET CONNECTIONS OF CONTROL VALVE TO FACILITATE SERVICING.
- (4) THE USE OF DISSIMILAR METALS IN A PIPING SYSTEM IS NOT RECOMMENDED. WHERE DISSIMILAR METALS MUST BE CONNECTED IN A WATER SYSTEM. THE USE OF NONCONDUCTIVE (DIELECTRIC) FITTINGS MAY REDUCE GALVANIC CORROSION.
- (5) FOR MAXIMUM PROTECTION OF THE CONTROLLER, IT IS RECOMMENDED THAT A DEDICATED 120 VOLT CIRCUIT IS PROVIDED.
- (6) ALLOW A MINIMUM OF 24 INCHES ABOVE SOFTENER FOR FILLING.
- (7) TO PERMIT THE OBSERVATION OF THE DRAIN FLOW DO NOT MAKE A DIRECT CONNECTION TO THE DRAIN. PROVIDE AN AIR GAP OF AT LEAST FOUR TIMES THE DIAMETER OF THE DRAIN PIPE OR CONFORM TO LOCAL SANITATION CODES.
- (8) OVERALL TANK HEIGHT IS BASED ON STANDARD NON-CODE TANK CONSTRUCTION. SEE ASME TANK HEIGHT ADDER FOR ASME TANKS.
- (9) WHEN USING A WATER METER, THERE MUST BE A MINIMUM AMOUNT OF STRAIGHT PIPE BEFORE AND AFTER THE SENSOR. REFER TO THE INSTALLATION INSTRUCTIONS FOR DETAILS.
- (10) BRINE TANK DIMENSIONS SHOWN ARE FOR THE BRINE TANK MOST COMMONLY SELECTED FOR USE WITH THIS SIZE SYSTEM.
- (11) ACCESS OPENINGS SHOWN ON TANK ARE FOR REFERENCE ONLY. QUANTITY, TYPE AND PLACEMENT ARE DEPENDENT ON TANK SIZE.

DIMENSIONS (INCHES)																					
MODEL	WIDTH A(10)	HEIGHT B(8)	DEPTH C	TANK DIA. D	SIDE-SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H	INLET TO OUTLET J	BOLT HOLE CIRCLE DIA. K	BRINE TANK DIA. L(10)	BRINE TANK HEIGHT M(10)	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft <sup>3</sup>	CONTINUOUS FLOW gpm @ 15 psi drop	PEAK FLOW gpm @ 25 psi drop	DRAIN FLOW gpm	MIN. DRAIN PIPE SIZE IN.	ASME TANK HEIGHT ADDER (8) IN.	SIMPLEX OPER. WT. lbs.	SIMPLEX SHIP. WT. lbs.
CSM 150-2	56	73	31	20	54	2.0	0.75	47.62	4.62	14"	24	48	150 @ 50	5	67	94	10	1.0	3	2500	830
CSM 210-2	60	74	35	24	54	2.0	1.0	47.62	4.62	18"	24	48	210 @ 70	7	76	102	13.5	1.0	4	2900	1115
CSM 300-2	72	85	42	30	60	2.0	1.0	47.62	4.62	24"	30	48	300 @ 100	10	84	112	20	1.25	4.25	3900	1580
CSM 300-3	72	85	44	30	60	3.0	1.0	49.62	6.62	24"	30	48	300 @ 100	10	152	210	20	1.25	4.25	4000	1630
CSM 450-2	72	85	42	30	60	2.0	1.0	47.62	4.62	24"	30	48	450 @ 150	15	79	106	20	1.25	4.25	4700	1940
CSM 450-3	72	85	44	30	60	3.0	1.0	49.62	6.62	24"	30	48	450 @ 150	15	135	192	20	1.25	4.25	4800	1990
CSM 600-2	84	88	48	36	60	2.0	1.0	47.62	4.62	30"	36	48	600 @ 200	20	94	125	30	1.25	7	7000	2585
CSM 600-3	84	88	50	36	60	3.0	1.0	49.62	6.62	30"	36	48	600 @ 200	20	183	252	30	1.25	7	7100	2635
CSM 750-2	96	90	54	42	60	2.0	2.5	47.62	4.62	36"	42	48	750 @ 250	25	97	129	45	2	3	8400	3390
CSM 750-3	96	90	56	42	60	3.0	2.5	49.62	6.62	36"	42	48	750 @ 250	25	201	267	45	2	3	8500	3440
CSM 900-2	96	90	54	42	60	2.0	2.5	47.62	4.62	36"	42	48	900 @ 300	30	96	127	45	2	3	9000	3650
CSM 900-3	96	90	56	42	60	3.0	2.5	49.62	6.62	36"	42	48	900 @ 300	30	193	259	45	2	3	9000	3700

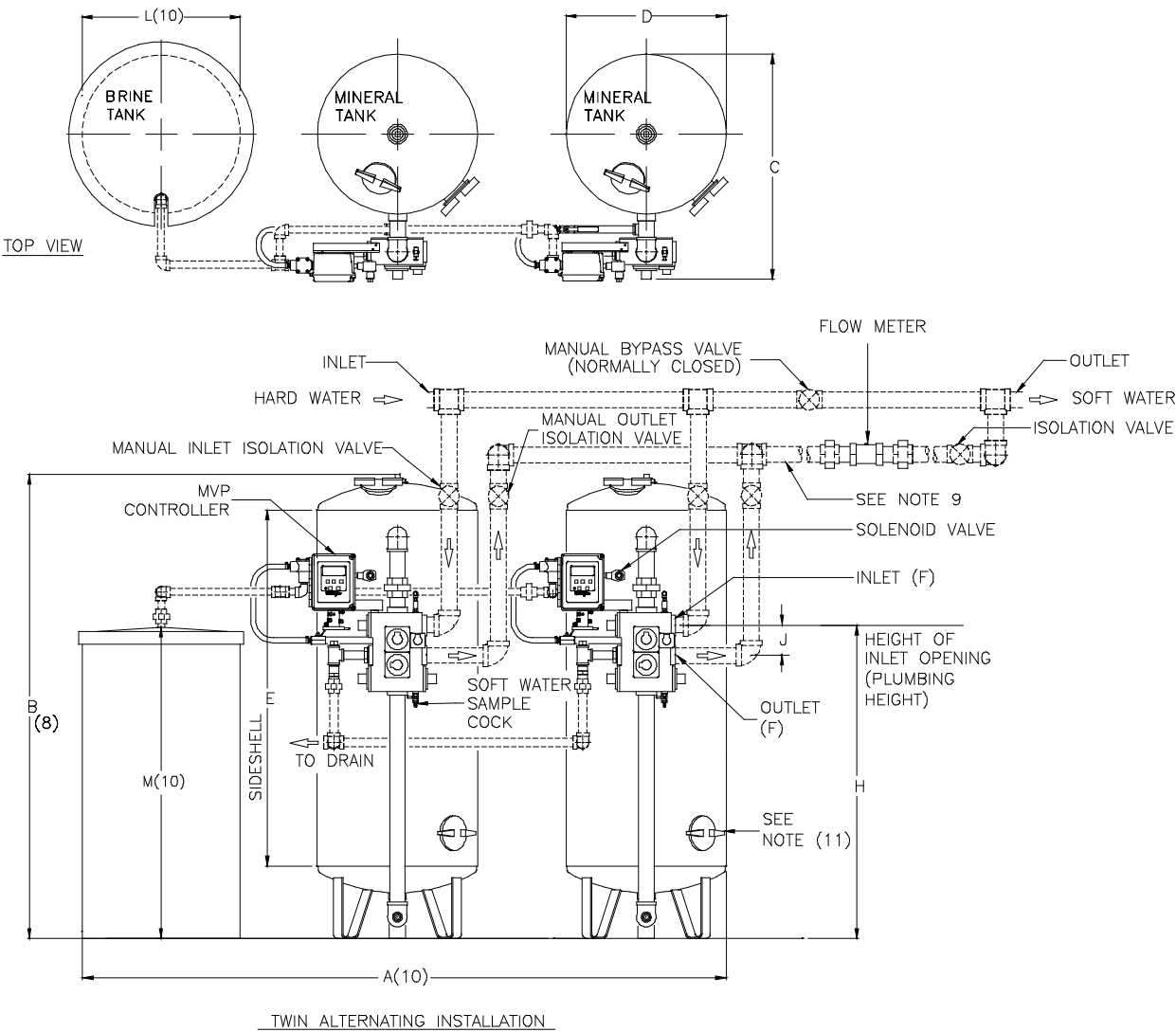
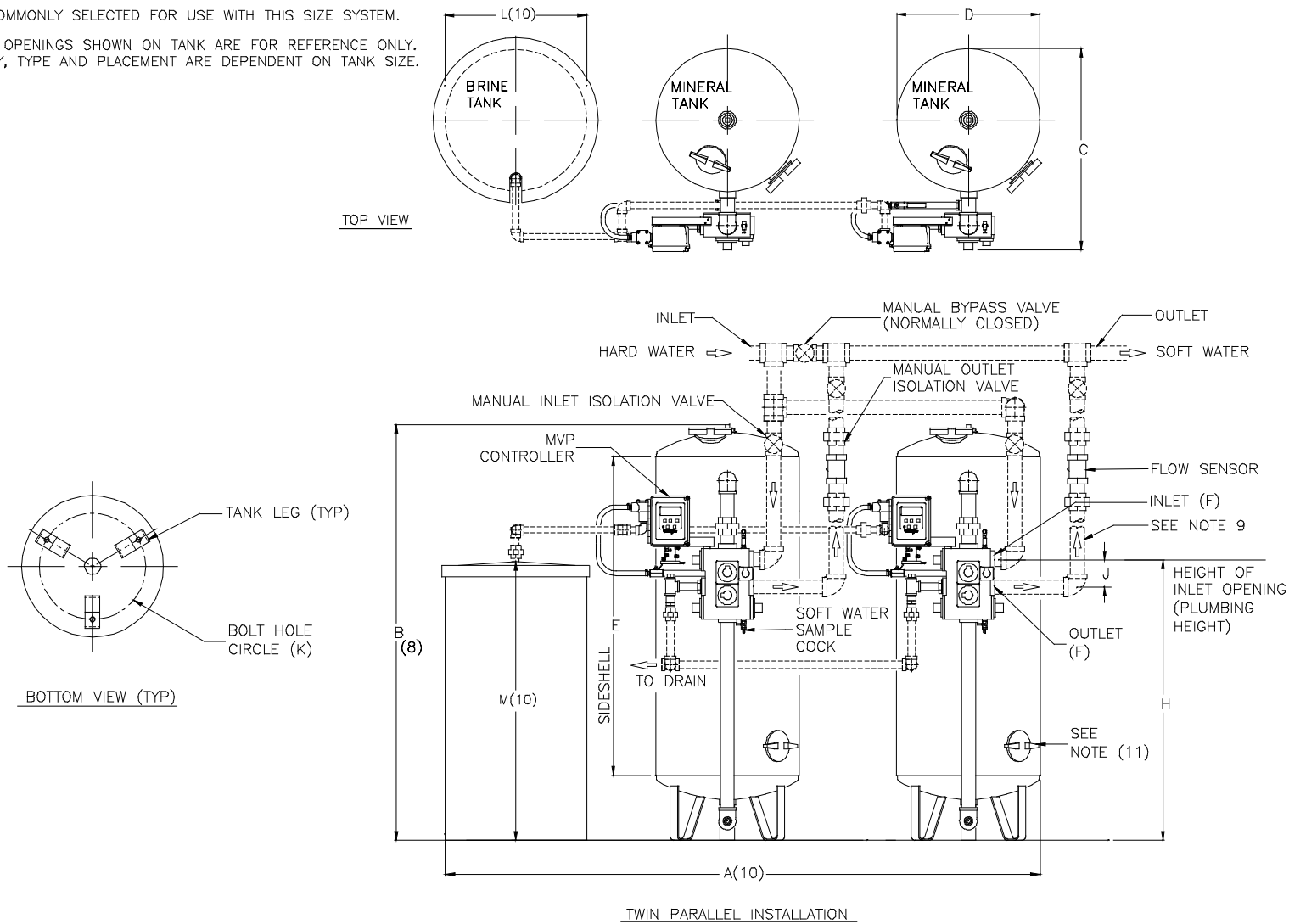


DO NOT SCALE DRAWING TOLERANCES: ±1/8" UNLESS OTHERWISE NOTED					 <b>ENGINEERED SYSTEMS</b> NORTHBROOK, ILLINOIS  PRINT AND BILL OF MATERIAL ARE NOT TO BE USED WITHOUT THE WRITTEN CONSENT OF CULLIGAN INTERNATIONAL CO.	NAME CSM SINGLE WATER SOFTENER SYSTEM TECHNICAL DATA SHEET		
Let.	Change	By	App	Date		DETAILED BY: KMR 4/26/05	APP. BY:	SHEET 1 OF 1
						REF. NO.	PART NO.	
							CSM_1	

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- (4) THE USE OF DISSIMILAR METALS IN A PIPING SYSTEM IS NOT RECOMMENDED. WHERE DISSIMILAR METALS MUST BE CONNECTED IN A WATER SYSTEM, THE USE OF NONCONDUCTIVE (DIELECTRIC) FITTINGS MAY REDUCE GALVANIC CORROSION.
- (5) FOR MAXIMUM PROTECTION OF THE CONTROLLER, IT IS RECOMMENDED THAT A DEDICATED 120 VOLT CIRCUIT IS PROVIDED.
- (6) ALLOW A MINIMUM OF 24 INCHES ABOVE SOFTENER FOR FILLING.
- (7) TO PERMIT THE OBSERVATION OF THE DRAIN FLOW DO NOT MAKE A DIRECT CONNECTION TO THE DRAIN. PROVIDE AN AIR GAP OF AT LEAST FOUR TIMES THE DIAMETER OF THE DRAIN PIPE OR CONFORM TO LOCAL SANITATION CODES.
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- (10) BRINE TANK DIMENSIONS SHOWN ARE FOR THE BRINE TANK MOST COMMONLY SELECTED FOR USE WITH THIS SIZE SYSTEM.
- (11) ACCESS OPENINGS SHOWN ON TANK ARE FOR REFERENCE ONLY. QUANTITY, TYPE AND PLACEMENT ARE DEPENDENT ON TANK SIZE.

	DIMENSIONS (INCHES)												UNIT DATA (PER TANK)								
MODEL	WIDTH A(10)	HEIGHT B(8)	DEPTH C	TANK DIA. D	SIDE – SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H	INLET TO OUTLET J	BOLT HOLE CIRCLE DIA. K	BRINE TANK DIA. L(10)	BRINE TANK HEIGHT M(10)	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft <sup>3</sup>	CONTINUOUS FLOW gpm @ 15 psi drop	PEAK FLOW gpm @ 25 psi drop	DRAIN FLOW gpm	MIN. DRAIN PIPE SIZE IN.	ASME TANK HEIGHT ADDER (8) IN.	DUPLEX OPER. WT. lbs.	DUPLEX SHIP. WT lbs.
CSM 150–2	88	73	31	20	54	2.0	0.75	47.62	4.62	14"	24	48	150 @ 50	5	67	94	10	1.0	3	3700	1660
CSM 210–2	96	74	35	24	54	2.0	1.0	47.62	4.62	18"	24	48	210 @ 70	7	76	102	13.5	1.0	4	4600	2230
CSM 300–2	114	85	42	30	60	2.0	1.0	47.62	4.62	24"	30	48	300 @ 100	10	84	112	20	1.25	4.25	6600	3160
CSM 300–3	114	85	44	30	60	3.0	1.0	49.62	6.62	24"	30	48	300 @ 100	10	152	210	20	1.25	4.25	6700	3260
CSM 450–2	114	85	42	30	60	2.0	1.0	47.62	4.62	24"	30	48	450 @ 150	15	79	106	20	1.25	4.25	7600	3880
CSM 450–3	114	85	44	30	60	3.0	1.0	49.62	6.62	24"	30	48	450 @ 150	15	135	192	20	1.25	4.25	7700	3980
CSM 600–2	132	88	48	36	60	2.0	1.0	47.62	4.62	30"	36	48	600 @ 200	20	94	125	30	1.25	7	11000	5170
CSM 600–3	132	88	50	36	60	3.0	1.0	49.62	6.62	30"	36	48	600 @ 200	20	183	252	30	1.25	7	11100	5270
CSM 750–2	150	90	54	42	60	2.0	2.5	47.62	4.62	36"	42	48	750 @ 250	25	97	129	45	2	3	13800	6780
CSM 750–3	150	90	56	42	60	3.0	2.5	49.62	6.62	36"	42	48	750 @ 250	25	201	267	45	2	3	13900	6880
CSM 900–2	150	90	54	42	60	2.0	2.5	47.62	4.62	36"	42	48	900 @ 300	30	96	127	45	2	3	14400	7300
CSM 900–3	150	90	56	42	60	3.0	2.5	49.62	6.62	36"	42	48	900 @ 300	30	193	259	45	2	3	14500	7400

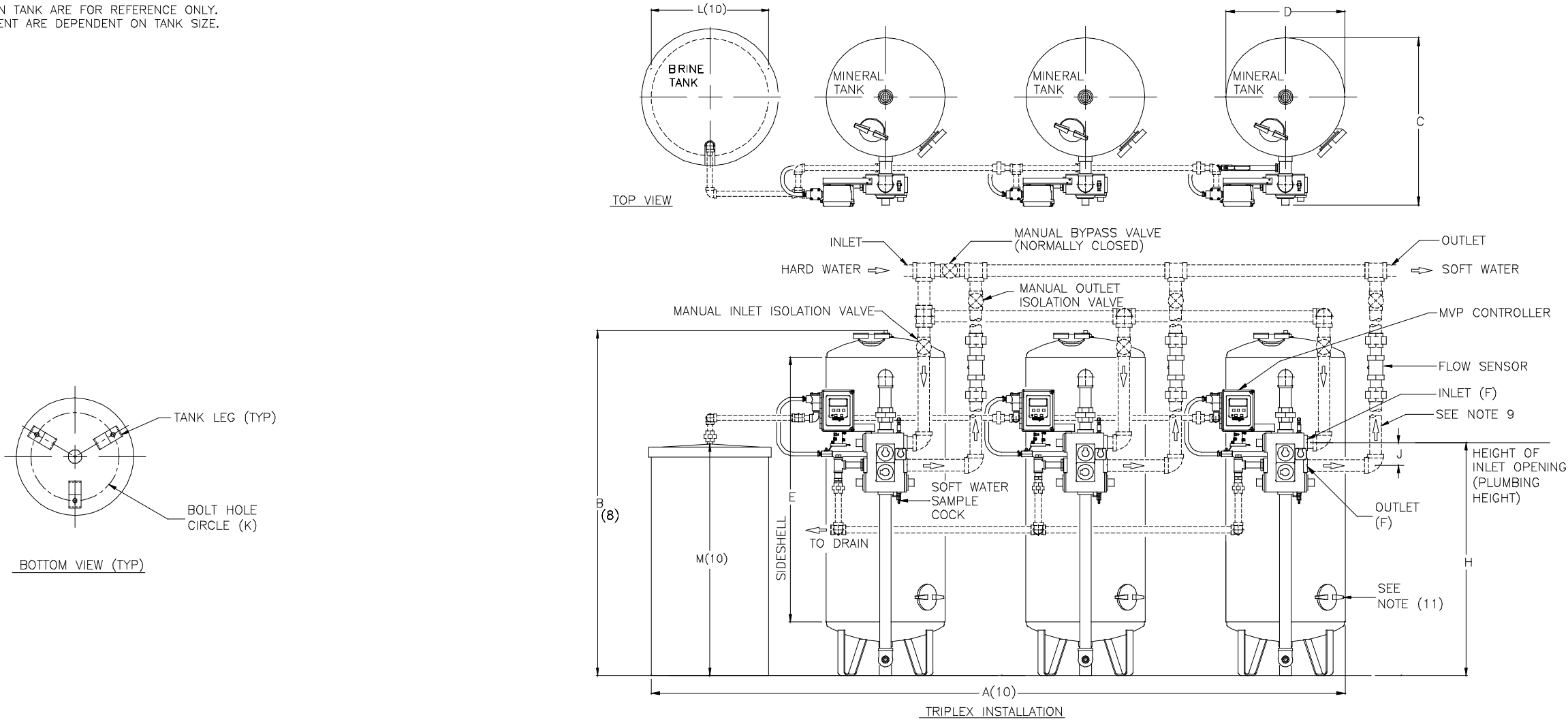


DO NOT SCALE DRAWING TOLERANCES: ±1/8" UNLESS OTHERWISE NOTED					 <b>ENGINEERED SYSTEMS</b> NORTHBROOK, ILLINOIS  PRINT AND BILL OF MATERIAL ARE NOT TO BE USED WITHOUT THE WRITTEN CONSENT OF CULLIGAN INTERNATIONAL CO.	NAME CSM DUPLEX WATER SOFTENER SYSTEM TECHNICAL DATA SHEET		
Let.	Change	By	App	Date		DETAILED BY: KMR 4/26/05	APP. BY:	SHEET 1 OF 1
						REF. NO.	PART NO.	
							CSM_2	



- NOTES:
- (1) ITEMS SHOWN IN BROKEN LINES TO BE FURNISHED BY OTHERS.
- (2) ALL DIMENSIONS ARE ± 1 INCH (25mm) AND SUBJECT TO CHANGE WITHOUT NOTICE.
- (3) UNIONS SHOULD BE LOCATED ON INLET AND OUTLET CONNECTIONS OF CONTROL VALVE TO FACILITATE SERVICING.
- (4) THE USE OF DISSIMILAR METALS IN A PIPING SYSTEM IS NOT RECOMMENDED. WHERE DISSIMILAR METALS MUST BE CONNECTED IN A WATER SYSTEM, THE USE OF NONCONDUCTIVE (DIELECTRIC) FITTINGS MAY REDUCE GALVANIC CORROSION.
- (5) FOR MAXIMUM PROTECTION OF THE CONTROLLER, IT IS RECOMMENDED THAT A DEDICATED 120 VOLT CIRCUIT IS PROVIDED.
- (6) ALLOW A MINIMUM OF 24 INCHES ABOVE SOFTENER FOR FILLING.
- (7) TO PERMIT THE OBSERVATION OF THE DRAIN FLOW DO NOT MAKE A DIRECT CONNECTION TO THE DRAIN. PROVIDE AN AIR GAP OF AT LEAST FOUR TIMES THE DIAMETER OF THE DRAIN PIPE OR CONFORM TO LOCAL SANITATION CODES.
- (8) OVERALL TANK HEIGHT IS BASED ON STANDARD NON-CODE TANK CONSTRUCTION. SEE ASME TANK HEIGHT ADDER FOR ASME TANKS.
- (9) WHEN USING A WATER METER, THERE MUST BE A MINIMUM AMOUNT OF STRAIGHT PIPE BEFORE AND AFTER THE SENSOR. REFER TO THE INSTALLATION INSTRUCTIONS FOR DETAILS.
- (10) BRINE TANK DIMENSIONS SHOWN ARE FOR THE BRINE TANK MOST COMMONLY SELECTED FOR USE WITH THIS SIZE SYSTEM.
- (11) ACCESS OPENINGS SHOWN ON TANK ARE FOR REFERENCE ONLY. QUANTITY, TYPE AND PLACEMENT ARE DEPENDENT ON TANK SIZE.

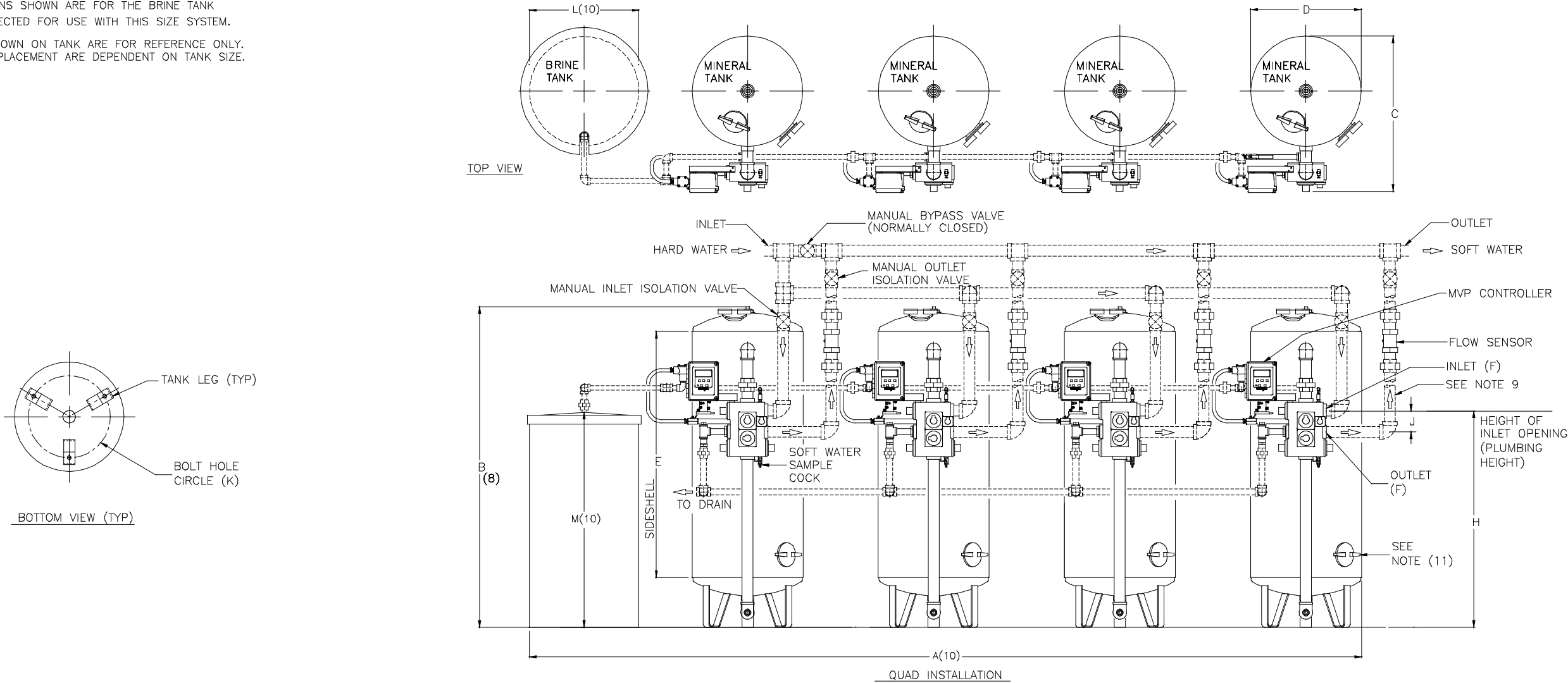
MODEL	DIMENSIONS (INCHES)												UNIT DATA (PER TANK)								
	WIDTH A(10)	HEIGHT B(8)	DEPTH C	TANK DIA. D	SIDE-SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H	INLET TO OUTLET J	BOLT HOLE CIRCLE DIA. K	BRINE TANK DIA. L(10)	BRINE TANK HEIGHT M(10)	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft <sup>3</sup>	CONTINUOUS FLOW gpm @ 15 psi drop	PEAK FLOW gpm @ 25 psi drop	DRAIN FLOW gpm	MIN. DRAIN PIPE SIZE IN.	ASME TANK HEIGHT ADDER (8) IN.	TRIPLEX OPER. WT. lbs.	TRIPLEX SHIP. WT. lbs.
CSM 150-2	120	73	31	20	54	2.0	0.75	47.62	4.62	14"	24	48	150 @ 50	5	67	94	10	1.0	3	4900	2490
CSM 210-2	132	74	35	24	54	2.0	1.0	47.62	4.62	18"	24	48	210 @ 70	7	76	102	13.5	1.0	4	6300	3345
CSM 300-2	156	85	42	30	60	2.0	1.0	47.62	4.62	24"	30	48	300 @ 100	10	84	112	20	1.25	4.25	9300	4740
CSM 300-3	156	85	44	30	60	3.0	1.0	49.62	6.62	24"	30	48	300 @ 100	10	152	210	20	1.25	4.25	9400	4890
CSM 450-2	156	85	42	30	60	2.0	1.0	47.62	4.62	24"	30	48	450 @ 150	15	79	106	20	1.25	4.25	10500	5820
CSM 450-3	156	85	44	30	60	3.0	1.0	49.62	6.62	24"	30	48	450 @ 150	15	135	192	20	1.25	4.25	10600	5970
CSM 600-2	180	88	48	36	60	2.0	1.0	47.62	4.62	30"	36	48	600 @ 200	20	94	125	30	1.25	7	15000	7755
CSM 600-3	180	88	50	36	60	3.0	1.0	49.62	6.62	30"	36	48	600 @ 200	20	183	252	30	1.25	7	15100	7905
CSM 750-2	204	90	54	42	60	2.0	2.5	47.62	4.62	36"	42	48	750 @ 250	25	97	129	45	2	3	19200	10170
CSM 750-3	204	90	56	42	60	3.0	2.5	49.62	6.62	36"	42	48	750 @ 250	25	201	267	45	2	3	19300	10320
CSM 900-2	204	90	54	42	60	2.0	2.5	47.62	4.62	36"	42	48	900 @ 300	30	96	127	45	2	3	19800	10950
CSM 900-3	204	90	56	42	60	3.0	2.5	49.62	6.62	36"	42	48	900 @ 300	30	193	259	45	2	3	20000	11100



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Let.	Change	By	App	Date		DETAILED BY: KMR 4/26/05	APP. BY:	SHEET 1 OF 1
						REF. NO.	PART NO.	
							CSM_3	

- NOTES:
- (1) ITEMS SHOWN IN BROKEN LINES TO BE FURNISHED BY OTHERS.
- (2) ALL DIMENSIONS ARE ± 1 INCH (25mm) AND SUBJECT TO CHANGE WITHOUT NOTICE.
- (3) UNIONS SHOULD BE LOCATED ON INLET AND OUTLET CONNECTIONS OF CONTROL VALVE TO FACILITATE SERVICING.
- (4) THE USE OF DISSIMILAR METALS IN A PIPING SYSTEM IS NOT RECOMMENDED. WHERE DISSIMILAR METALS MUST BE CONNECTED IN A WATER SYSTEM. THE USE OF NONCONDUCTIVE (DIELECTRIC) FITTINGS MAY REDUCE GALVANIC CORROSION.
- (5) FOR MAXIMUM PROTECTION OF THE CONTROLLER, IT IS RECOMMENDED THAT A DEDICATED 120 VOLT CIRCUIT IS PROVIDED.
- (6) ALLOW A MINIMUM OF 24 INCHES ABOVE SOFTENER FOR FILLING.
- (7) TO PERMIT THE OBSERVATION OF THE DRAIN FLOW DO NOT MAKE A DIRECT CONNECTION TO THE DRAIN. PROVIDE AN AIR GAP OF AT LEAST FOUR TIMES THE DIAMETER OF THE DRAIN PIPE OR CONFORM TO LOCAL SANITATION CODES.
- (8) OVERALL TANK HEIGHT IS BASED ON STANDARD NON-CODE TANK CONSTRUCTION. SEE ASME TANK HEIGHT ADDER FOR ASME TANKS.
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MODEL	DIMENSIONS (INCHES)												UNIT DATA (PER TANK)								
	WIDTH A(10)	HEIGHT B(8)	DEPTH C	TANK DIA. D	SIDE-SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H	INLET TO OUTLET J	BOLT HOLE CIRCLE DIA. K	BRINE TANK DIA. L(10)	BRINE TANK HEIGHT M(10)	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft <sup>3</sup>	CONTINUOUS FLOW gpm @ 15 psi drop	PEAK FLOW gpm @ 25 psi drop	DRAIN FLOW gpm	MIN. DRAIN PIPE SIZE IN.	ASME TANK HEIGHT ADDER (8) IN.	QUAD OPER. WT. lbs.	QUAD SHIP. WT. lbs.
CSM 150-2	152	73	31	20	54	2.0	0.75	47.62	4.62	14"	24	48	150 @ 50	5	67	94	10	1.0	3	6100	3320
CSM 210-2	168	74	35	24	54	2.0	1.0	47.62	4.62	18"	24	48	210 @ 70	7	76	102	13.5	1.0	4	8000	4460
CSM 300-2	198	85	42	30	60	2.0	1.0	47.62	4.62	24"	30	48	300 @ 100	10	84	112	20	1.25	4.25	12000	6320
CSM 300-3	198	85	44	30	60	3.0	1.0	49.62	6.62	24"	30	48	300 @ 100	10	152	210	20	1.25	4.25	12100	6520
CSM 450-2	198	85	42	30	60	2.0	1.0	47.62	4.62	24"	30	48	450 @ 150	15	79	106	20	1.25	4.25	13400	7760
CSM 450-3	198	85	44	30	60	3.0	1.0	49.62	6.62	24"	30	48	450 @ 150	15	135	192	20	1.25	4.25	13500	7960
CSM 600-2	228	88	48	36	60	2.0	1.0	47.62	4.62	30"	36	48	600 @ 200	20	94	125	30	1.25	7	19000	10340
CSM 600-3	228	88	50	36	60	3.0	1.0	49.62	6.62	30"	36	48	600 @ 200	20	183	252	30	1.25	7	19100	10540
CSM 750-2	258	90	54	42	60	2.0	2.5	47.62	4.62	36"	42	48	750 @ 250	25	97	129	45	2	3	24600	13560
CSM 750-3	258	90	56	42	60	3.0	2.5	49.62	6.62	36"	42	48	750 @ 250	25	201	267	45	2	3	24700	13760
CSM 900-2	258	90	54	42	60	2.0	2.5	47.62	4.62	36"	42	48	900 @ 300	30	96	127	45	2	3	25200	14600
CSM 900-3	258	90	56	42	60	3.0	2.5	49.62	6.62	36"	42	48	900 @ 300	30	193	259	45	2	3	25300	14800



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Let.	Change	By	App	Date		DETAILED BY: KMR 4/26/05	APP. BY:	SHEET 1 OF 1
						REF. NO.	PART NO.	
							CSM_4	