More

Culligan®

Culligan® Heavy Duty Commercial Softener

apartments

assisted living facilities

cafeterias

casinos

corporate campuses

educational facilities

food service

government

grocery

health clubs

hotel/hospitality

institutions

laundry

manufacturing facilities

theme parks

travel centers

vehicle wash

Culligan's Hi-Flo® 55e 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 203 gpm per tank.
- Regeneration initiation by choice or combination of time clock, meter or Aqua-Sensor® inputs.
- Top-Mounted Control Valve – Keeps plumbing connections simple and adaptable. Full flow porting with rounded orifices and wide-open cartridges promote good flow characteristics and low pressure fluctuations.
- Corrosion resistant tanks – Made of low carbon steel with epoxy interior lining and finish coat painted exterior.

Trust The Water Experts®

Culligan's Hi-Flo® 55e 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

Culligan® Salt Saving System– reduces operating costs by recycling a portion of the regeneration water.

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 *Hi-Flo* 55e 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[1]
Power Consumption:	3/42 Watts Min/Max
Temperature:	40–120°F 4 - 49°C
Turbidity:	5 NTU, max.[2]
Chlorine:	1 mg/L, max.[2]
Iron:	5 mg/L, max.

[1]120 Volt/24 Volt CUL/UL listed Transformer Included.

[2]See media specification for details.

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

Model	Resin Qty. (Ft^3)	Pipe Size	Flow Rate Gallons Per Minute		Tank Size***	
			Continuous*	Peak**	Softener	Brine****
HS-152	5	2”	69	97	20” x 48”	24” x 48”
HV-122	5	2”	72	98	20” x 48”	24” x 48”
HS-242	8	2”	73	103	24” x 48”	24” x 48”
HV-193	8	3”	120	169	24” x 48”	24” x 48”
HS-302	10	2”	98	137	30” x 48”	30” x 48”
HS-452	15	2”	92	128	30” x 54”	30” x 48”
HV-363	15	3”	146	195	30” x 54”	30” x 48”
HS-603	20	3”	183	276	36” x 54”	36” x 48”
HS-813	27	3”	203	286	42” x 54”	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. Size shown is size most commonly selected.

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.

Aqua-Sensor Patent # US 5,699,272
Progressive Flow Patent # US 5,060,167
US 5,351,199

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MOORE PART NO. 46909

ISO 9001 Certification

MVP Controller

More

Culligan®

Introducing the Culligan® MVP Electronic Controller

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*

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 deactive at any point of the regeneration process.

Trust The Water Experts®

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 regenerating simultaneously.

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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MOORE PART NO. 46968

MVP Controller

ISO 9001 Certification

* *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.

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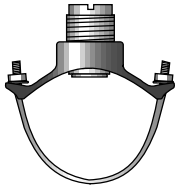
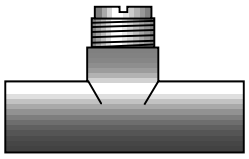
THE XLF FLOW SENSOR PACKAGE

XLF Flow Sensor

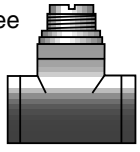


Iron Saddle

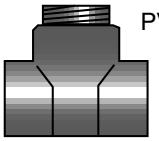


Copper/Bronze Tees

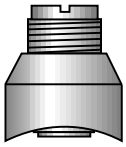
Iron Tee



PVC Tee



Bronze Brazolet



For use with IQS Electronic Water Treatment Equipment Controller

REGENERATION CONTROLS

Product Description

The XLF flow sensor package is an input device for the IQS type controller used to measure treated water flow. Flow data then provides one or all of the following functions:

- repeatedly measure and deliver a specified volume of treated water.
- digital instantaneous flow rate.
- digital instantaneous total treated water usage.

Packages are available for use in treated water pipe sizes from 1 inch through 6 inch. A wide variety of installation fittings are available to assure compatibility with many commonly used plumbing materials:

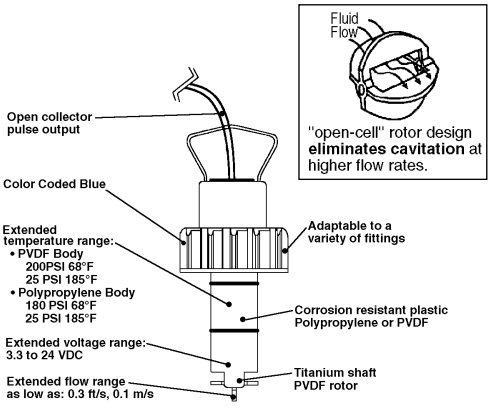
- Threaded galvanized
- Copper sweat
- PVC; CPVC
- Iron
- Steel

The XLF flow sensor package is comprised of:

- One (1) paddlewheel insertion type flow sensor element sized for the specified pipe diameter
- One (1) installation fitting for the specified pipe type and size.

How It Works

The solid state paddlewheel flow sensor works on a simple, but precise, electro-mechanical principle. A magnetic rotor positioned in the flow stream spins past a solid state switch which in turn pulses a low voltage DC current proportional to the rate of flow. The rotor design ensures an accurate, repeatable output throughout the sensor's entire operating range with negligible head loss and no cavitation.



Features & Benefits

- Flow range; 0.3 ft/s to 20 ft/s
- Low cost.
- Low pressure loss.
- Ease of installation and service.
- Excellent resistance to corrosion and wear
- High accuracy and repeatability.
- Compatible with most types of piping materials – PVC, copper, brass, galvanized iron and steel.
- Wide range of temperature pressure and flow characteristics.
- Low voltage operation.
- Tested to NIST standards (National Institute of Standards and Techonology).

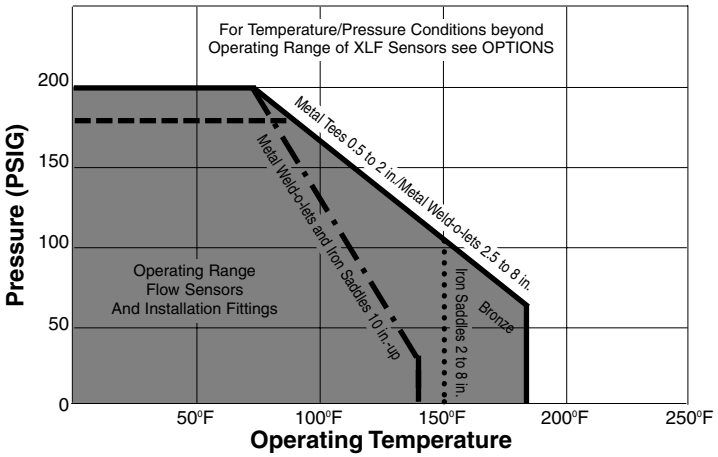
Flow Sensor Application Data

Flow Sensor Selection

To select the flow sensor package that best fits your requirements, consider these application parameters:

1. Determine Installation Fitting Type – fittings are available for a variety of piping materials.
2. Determine Installation Fitting Size – identify the HIGHEST anticipated flow rate which would occur regularly thru EACH tank of a single/multiple tank network. Match this value against those in the MINIMUM and MAXIMUM FLOW column of the Flow Rate Range Table to find the corresponding installation Fitting Pipe Size.
3. Verify Temperature/Pressure Operating Range – the maximum operating pressure for the XLF series flow sensor is dependent on the measured fluid temperature and type of installation fitting. Refer to the Temperature/Pressure Graph for operating range. Refer to OPTIONS paragraph for applications requiring a higher temperature/pressure rating.

Temperature/Pressure Relationship Table



† PRESSURE LOSS FORMULA (S.G.=1.0)

$$\left(\frac{\text{Actual Flow (GPM)}}{C_V \text{ Factor } \blacksquare}\right) = \text{Pressure Loss (PSI)} \text{ @ Actual Flow (GPM)}$$

Options

Installation Fitting Service Plug:
Allows resumption of flow after depressurization and removal of flow sensor element.

Wet Tap Assembly:
Provides a safe and fast method of removing a flow sensor element without shutting off flow and pressure.
(Maximum Pressure – 100 psig @ 68°F; Maximum Temperature – 140°F @ 25 psig)

High Temperature/Pressure Applications:
Contact factory for pressures up to 1,500 psig and temperatures up to 300°F for stainless steel flow sensors.

Flow Rate Range Table

** Threaded Tee Sch 40 Galv. Pipe
*** Cast Iron Saddle Sch 40 Pipe

▲ Installation Fitting Pipe Size – (Inches)	■ C_V Factor	Flow Rate Range – (GPM) Minimum ▲	Maximum
1 **	39.0	0.7	44.0
$1\frac{1}{4}$ **	56.0	1.2	80.0
$1\frac{1}{2}$ **	84.0	1.7	110.0
2 **	157.0	2.8	187.0
$2\frac{1}{2}$ ***	273.0	4.5	298.0
3 ***	483.0	6.9	460.0
4 ***	977.0	11.9	793.0
5 ***	1750.0	18.7	1247.0
6 ***	2846.0	27.0	1800.0
8 ***	5773.0	47.0	3118.0
10 ***	10,660.0	74.0	4915.0

▲ Choose the Installation Fitting Pipe Size principally on the MINIMUM flow rate that would occur REGULARLY in the treated water stream of each water treatment tank.
DO NOT OVERSIZE THE INSTALLATION FITTING!

■ C_V = flow rate (GPM) @ 1.0 psi head loss; 60°F water temperature.
(includes worst case requirement of 50 pipe diameters before and 5 pipe diameters following the flow sensor location assuring minimum flow turbulence.)

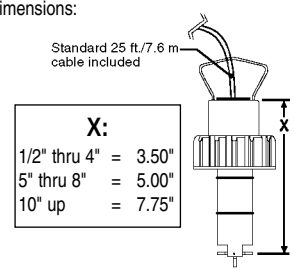
Specifications

Pressure Loss @ maximum rated flow: Less than 3.5 psig. See formula †

• includes head loss of required straight length of pipe both before and after flow sensor location.(maximum requirement –55 diameters)

C_V Factor:■	See Flow Range Table
Flow Rate Range:	0.3 thru 20 feet per second fluid velocity
Output Linearity:	± 1% of maximum range
Accuracy:	± 1% of maximum range
Repeatability:	± 0.5% of full range
Wetted Materials:	Polypropylene, Viton, Titanium, PVDF
*Maximum Temperature:	185°F @ 25 psig
*Maximum Pressure:	180 psig @ 68°F
Installation Requirements:	
*Maximum wire length between sensor and IQS/3 Controller	200 ft. –contact factory for greater distance requirements
*Number of pipe diameters required adjacent to flow sensor location dependent on source of upstream turbulence:	15 minimum/ 55 maximum
Electrical Output: *Requires DC Current from IQS/3;+5VDC @ 10 ma.	Open Collector, transistor, sinking
Environmental:	
Ambient temperature	-4°F to 122°F
Relative Humidity:	0% to 100% Non-condensing

Dimensions:



*Refer to table for temperature/pressure/ installation fitting relationships.

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Commercial Systems

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SL-0064
Moore Part No. 49004

HI-FLO® 55e

AUTOMATIC WATER SOFTENERS

SPECIFICATIONS AND OPERATING DATA

Single Unit Models	Exchange Capacity,[1] gpg @ lb. Salt Dosage		Service Flow Rates				Pipe Size in.	Resin Qty. cu. ft.	Softener Tank Size, in.	Brine Tank Size, in.	Approx. Ship. Wt. lb.
			Peak[2]		Continuous						
	Minimum	Maximum	Flow, gpm	Press. Drop psi	Flow, gpm	Press. Drop psi					
HS-152	100,000/30	150,000/75	80	19	60	12	2	5	20 x 48	24 x 48	700
HV-122	80,000/30	120,000/75	100	26	75	16	2	5	20 x 48	24 x 48	700
HS-242	160,000/48	240,000/120	100	24	75	16	2	8	24 x 48	24 x 48	930
HV-193	128,000/48	192,000/120	150	21	110	13	3	8	24 x 48	24 x 48	930
HS-302	200,000/60	300,000/150	110	18	75	10	2	10	30 x 48	30 x 48	1300
HS-452	300,000/90	450,000/225	110	20	75	11	2	15	30 x 54	30 x 48	1580
HV-363	240,000/90	360,000/225	190	24	140	14	3	15	30 x 54	30 x 48	1580
HS-603	400,000/120	600,000/300	230	20	175	14	3	20	36 x 54	36 x 48	2100
HS-813	540,000/162	810,000/405	230	18	175	12	3	27	42 x 54	42 x 48	2900

Duplex Models	Exchange Capacity,[1] gpg @ lb. Salt Dosage		Service Flow Rates				Pipe Size in.	Resin Qty. cu. ft.	Softener Tank Size, in.	Brine Tank Size, in.	Approx. Ship. Wt. lb.
			Peak[2]		Continuous						
	Minimum	Maximum	Flow, gpm	Press. Drop psi	Flow, gpm	Press. Drop psi					
HS-152-D	200,000/60	300,000/150	160	19	120	12	2	10	20 x 48	24 x 48	1350
HV-122-D	160,000/60	240,000/150	200	26	150	16	2	10	20 x 48	24 x 48	1350
HS-242-D	320,000/96	480,000/240	200	24	150	16	2	16	24 x 48	24 x 48	1800
HV-193-D	256,000/96	384,000/240	300	21	220	13	3	16	24 x 48	24 x 48	1800
HS-302-D	400,000/120	600,000/300	220	18	150	10	2	20	30 x 48	30 x 48	2500
HS-452-D	600,000/180	900,000/450	220	20	150	11	2	30	30 x 54	30 x 48	3100
HV-363-D	480,000/180	720,000/450	380	24	280	14	3	30	30 x 54	30 x 48	3100
HS-603-D	800,000/240	1,200,000/600	460	20	350	14	3	40	36 x 54	36 x 48	4120
HS-813-D	1,080,000/324	1,620,000/810	460	18	350	12	3	54	42 x 54	42 x 48	5700

1 Exchange capacities based on treating water containing 10 grains per gallon of hardness (expressed as calcium carbonate), free of color, oil, turbidity and at a continuous 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.

2 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.

NOTE: Operational, maintenance and replacement requirements are essential for this product to perform as advertised.

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Commercial Systems

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SL-0015

Hi-Flo® 55e

Automatic Water Softeners

Specifications and Operating Data - Metric

Single Unit Models	Exchange Capacity,[1] gpg @ kg Salt Dosage		Service Flow Rates				Pipe Size mm	Resin Qty. Litres	Softener Tank Size, mm	Brine Tank Size, mm	Approx. Ship. Wt. kg
			Peak[2]		Continuous						
	Minimum	Maximum	Flow, m^3/hr	Press. Drop kPa	Flow, m^3/hr	Press. Drop kPa					
HS-152	6,480/13.6	9,720/34.0	18.2	130	13.6	83	51	140	510 x 1200	610 x 1200	320
HV-122	5,180/13.6	7,780/34.0	22.7	180	17.0	110	51	140	510 x 1200	610 x 1200	320
HS-242	10,400/21.8	15,600/54.4	22.7	170	17.0	110	51	230	610 x 1200	610 x 1200	420
HV-193	8,290/21.8	12,400/54.4	34.1	140	25.0	90	76	230	610 x 1200	610 x 1200	420
HS-302	13,000/27.2	19,400/68.0	25.0	120	17.0	69	51	280	760 x 1200	760 x 1200	590
HS-452	19,400/40.8	29,200/102	25.0	140	17.0	76	51	420	760 x 1400	760 x 1200	720
HV-363	15,600/40.8	23,300/102	43.1	170	31.8	97	76	570	760 x 1400	760 x 1200	720
HS-603	25,900/54.4	38,900/136	52.2	140	39.7	97	76	570	910 x 1400	910 x 1200	950
HS-813	35,000/735	52,500/184	52.2	120	39.7	83	76	760	1100 x 1400	1100 x 1200	1300

Duplex Models	Exchange Capacity,[1] gpg @ kg Salt Dosage		Service Flow Rates				Pipe Size mm	Resin Qty. Litres	Softener Tank Size, mm	Brine Tank Size, mm	Approx. Ship. Wt. kg
			Peak[2]		Continuous						
	Minimum	Maximum	Flow, m^3/hr	Press. Drop kPa	Flow, m^3/hr	Press. Drop kPa					
HS-152-D	13,000/27.2	19,400/68.0	36.3	130	27.3	83	51	280	510 x 1200	610 x 1200	610
HV-122-D	10,400/27.2	15,600/68.0	45.4	180	34.1	110	51	280	510 x 1200	610 x 1200	610
HS-242-D	20,700/43.6	31,100/109	45.4	170	34.1	110	51	450	610 x 1200	610 x 1200	820
HV-193-D	16,600/43.6	24,900/109	68.1	140	50.0	90	76	450	610 x 1200	610 x 1200	820
HS-302-D	25,900/54.4	38,900/136	50.0	120	34.1	69	51	570	760 x 1200	760 x 1200	1100
HS-452-D	38,900/81.7	58,300/204	50.0	140	34.1	76	51	850	760 x 1400	760 x 1200	1400
HV-363-D	31,100/81.7	46,700/204	86.3	170	63.6	97	76	850	760 x 1400	760 x 1200	1400
HS-603-D	51,800/109	77,800/272	104	140	79.5	97	76	1100	910 x 1400	910 x 1200	1900
HS-813-D	70,000/147	105,000/367	104	120	79.5	83	76	1500	1100 x 1400	1100 x 1200	2600

1 Exchange capacities based on treating water containing 171 mg/L of hardness (expressed as calcium carbonate), free of color, oil, turbidity and at a continuous 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.

2 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.

NOTE: Operational, maintenance and replacement requirements are essential for this product to perform as advertised.

Culligan®

Commercial Systems

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DCO 992587
SL-0015

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:

For a period of ONE YEAR	**The entire conditioner.**
For a period of TWO YEARS	**The control valve internal parts. The brine valve and its component parts. The salt storage container internal components.**
For a period of FIVE YEARS	**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.**
For a period of TWELVE YEARS	**The conditioner tank, if it contains a plastic liner.**

* 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

PN 01016557

Printed in U.S.A.

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) AN ELECTRICAL OUTLET SHOULD BE PROVIDED WITHIN FIVE FEET OF THE EQUIPMENT LOCATION.

(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.

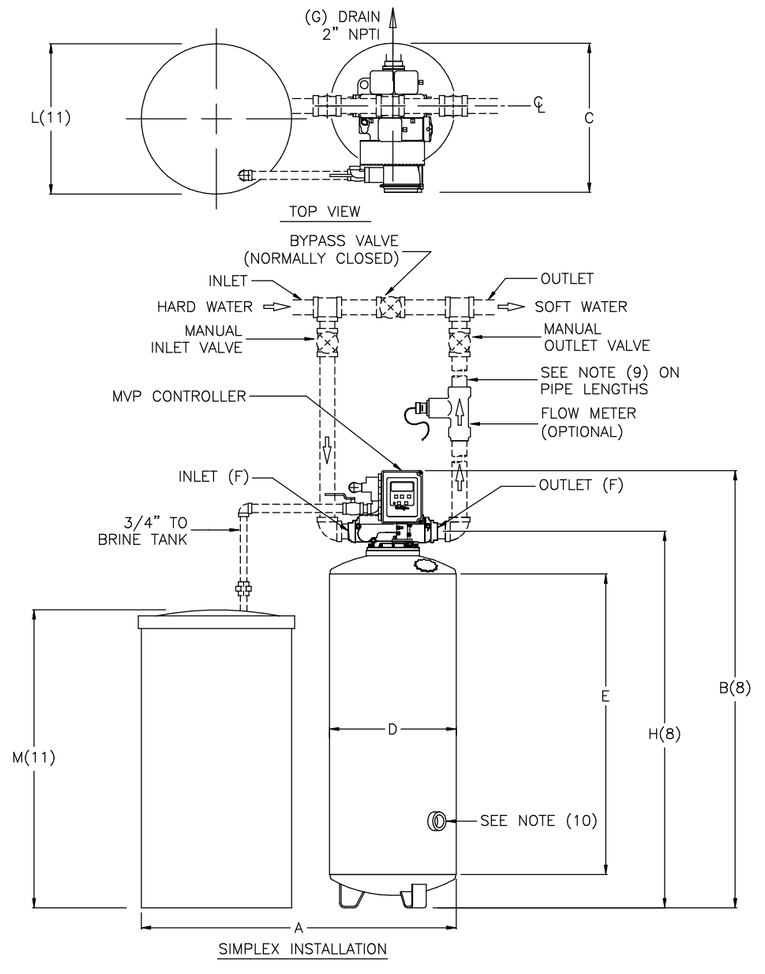
(8) OVERALL TANK HEIGHT IS BASED ON STANDARD NON–CODE TANK CONSTRUCTION. SEE ASME TANK HEIGHT ADDER FOR ASME TANKS.

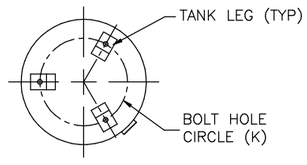
(9) WHEN USING A WATER METER, THERE MUST BE A MINIMUM AMOUNT OF STRAIGHT PIPE BEFORE AND AFTER THE SENSOR. REFER TO THE INSTALLATION INSTRUCTIONS FOR DETAILS.

(10) ACCESS OPENINGS SHOWN ON TANK ARE FOR REFERENCE ONLY. QUANTITY, TYPE AND PLACEMENT ARE DEPENDENT ON TANK SIZE.

(11) BRINE TANK DIMENSIONS SHOWN ARE FOR THE BRINE TANK MOST COMMONLY SELECTED FOR USE WITH THIS SIZE SYSTEM

	DIMENSIONS (INCHES)																		
MODEL	WIDTH A	HEIGHT B(8)	DEPTH C	TANK DIA. D	SIDE–SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H(8)	BOLT HOLE CIRCLE K	BRINE TANK DIA. L(11)	BRINE TANK HEIGHT M(11)	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft^3	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.
HS–152	50	71.00	28	20	48	2.0	2.0	61.75	14	24	48	150 @ 75	5	69	97	10	1.5	2.75	2200	700
HV–122	50	71.00	28	20	48	2.0	2.0	61.75	14	24	48	120 @ 75	5	72	98	10	1.5	2.75	2200	700
HS–242	54	73.00	28	24	48	2.0	2.0	64	18	24	48	240 @ 120	8	73	103	15	1.5	2	2600	930
HV–193	54	73.00	28	24	48	3.0	2.0	64	18	24	48	192 @ 120	8	120	169	15	1.5	2	2600	930
HS–302	66	75.25	34	30	48	2.0	2.0	66	24	30	48	300 @ 150	10	98	137	25	1.5	10	3600	1300
HS–452	66	81.38	34	30	54	2.0	2.0	72	24	30	48	450 @ 225	15	92	128	25	1.5	3.5	4200	1580
HV–363	66	81.38	34	30	54	3.0	2.0	72	24	30	48	360 @ 225	15	146	195	25	1.5	3.5	4200	1580
HS–603	78	82.25	40	36	54	3.0	2.0	73.25	29.75	36	48	600 @ 300	20	183	276	35	1.5	6.5	6100	2100
HS–813	90	83.75	46	42	54	3.0	2.0	74.5	35.75	42	48	810 @ 405	27	203	286	45	1.5	7	8400	2900





Hi-Flo 55e

CAD File: Hi-Flo 55e Softener Single.dwg

DO NOT SCALE DRAWING TOLERANCES: ±1/8" UNLESS OTHERWISE NOTED				
Let.	Change	By	App	Date

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME HI–FLO®55e HS–152 TO HS–813
HI–VELOCITY HV–122 TO 363
AUTOMATIC SOFTENERS

DETAILED BY:	APP. BY:	SHEET
KMR 12/03/03		1 OF 1

REF. NO.	PART NO.
	S55_1

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.

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(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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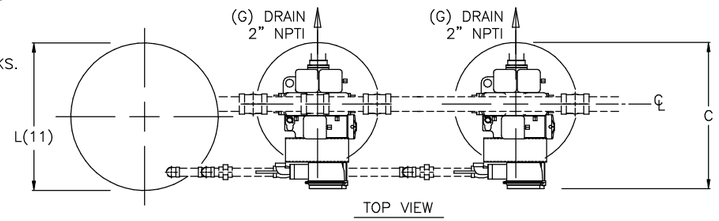
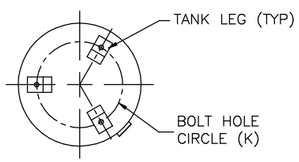
(11) BRINE TANK DIMENSIONS SHOWN ARE FOR THE BRINE TANK MOST COMMONLY SELECTED FOR USE WITH THIS SIZE SYSTEM

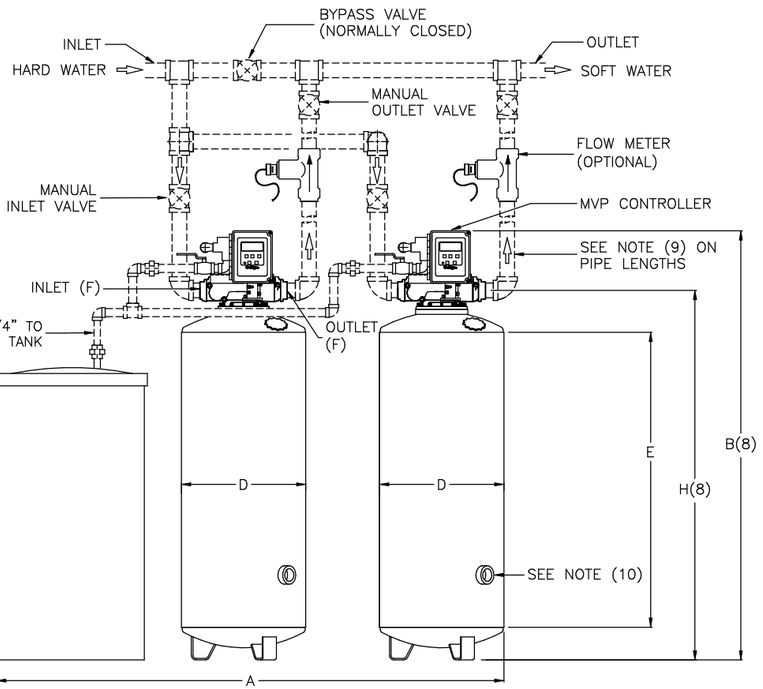
MODEL	DIMENSIONS (INCHES) WIDTH A	HEIGHT B(8)	DEPTH C	TANK DIA. D	SIDE–SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H(8)	BOLT HOLE CIRCLE K	BRINE TANK DIA. L(11)	BRINE TANK HEIGHT M(11)	UNIT DATA PER TANK MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft³	CONTINUOUS FLOW gpm @15 psi drop	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.
HS–152	76	71.00	28	20	48	2.0	2.0	61.75	14	24	48	150 @ 75	5	69	97	10	1.5	2.75	3735	1350
HV–122	76	71.00	28	20	48	2.0	2.0	61.75	14	24	48	120 @ 75	5	72	98	10	1.5	2.75	3405	1350
HS–242	84	73.00	28	24	48	2.0	2.0	64	18	24	48	240 @ 120	8	73	103	15	1.5	2	4855	1800
HV–193	84	73.00	28	24	48	3.0	2.0	64	18	24	48	192 @ 120	8	120	169	15	1.5	2	4335	1800
HS–302	102	75.25	34	30	48	2.0	2.0	66	24	30	48	300 @ 150	10	98	137	25	1.5	10	7390	2500
HS–452	102	81.38	34	30	54	2.0	2.0	72	24	30	48	450 @ 225	15	92	128	25	1.5	3.5	8260	3100
HV–363	102	81.38	34	30	54	3.0	2.0	72	24	30	48	360 @ 225	15	146	195	25	1.5	3.5	7595	3100
HS–603	120	82.25	40	36	54	3.0	2.0	73.25	29.75	36	48	600 @ 300	20	183	276	35	1.5	6.5	11525	4120
HS–813	138	83.75	46	42	54	3.0	2.0	74.5	35.75	42	48	810 @ 405	27	203	286	45	1.5	7	15920	5700



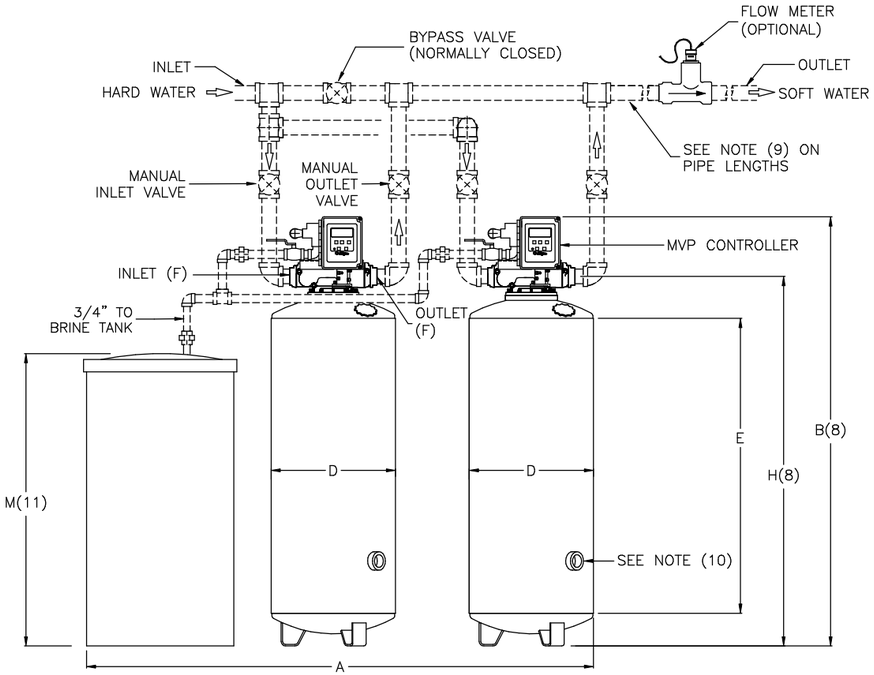
TOP VIEW



BOTTOM VIEW



PARALLEL DUPLEX INSTALLATION



ALTERNATING DUPLEX INSTALLATION

Hi-Flo 55e

CAD File: Hi-Flo 55e Softener Duplex.dwg

DO NOT SCALE DRAWING
TOLERANCES: ±1/8" UNLESS OTHERWISE NOTED

Let.	Change	By	App	Date

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME HI–FLO®55e HS–152 TO HS–813
HI–VELOCITY HV–122 TO 363
AUTOMATIC SOFTENERS

DETAILED BY:	APP. BY:	SHEET
KMR 12/03/03		1 OF 1

REF. NO.	PART NO.
	S55_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.

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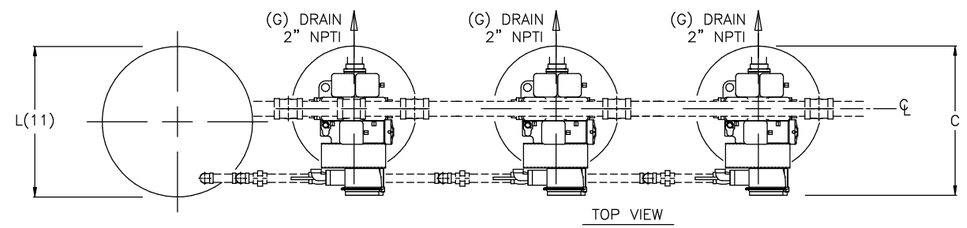
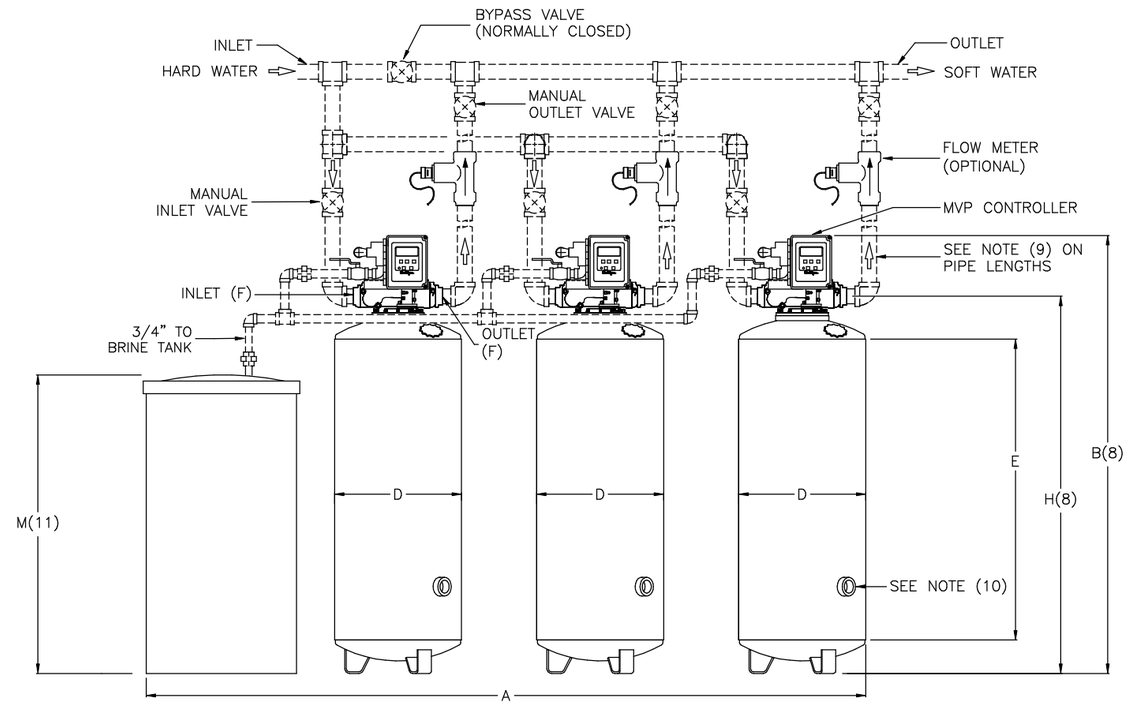
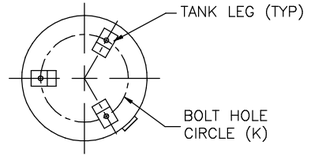
	DIMENSIONS (INCHES)											UNIT DATA PER TANK								
MODEL	WIDTH A	HEIGHT B(8)	DEPTH C	TANK DIA. D	SIDE–SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H(8)	BOLT HOLE CIRCLE K	BRINE TANK DIA. L(11)	BRINE TANK HEIGHT M(11)	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft^3	CONTINUOUS 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.
HS–152	102	71.00	28	20	48	2.0	2.0	61.75	14	24	48	150 @ 75	5	69	97	10	1.5	2.75	5270	2000
HV–122	102	71.00	28	20	48	2.0	2.0	61.75	14	24	48	120 @ 75	5	72	98	10	1.5	2.75	4610	2000
HS–242	114	73.00	28	24	48	2.0	2.0	64	18	24	48	240 @ 120	8	73	103	15	1.5	2	7110	2670
HV–193	114	73.00	28	24	48	3.0	2.0	64	18	24	48	192 @ 120	8	120	169	15	1.5	2	6070	2670
HS–302	138	75.25	34	30	48	2.0	2.0	66	24	30	48	300 @ 150	10	98	137	25	1.5	10	11180	3700
HS–452	138	81.38	34	30	54	2.0	2.0	72	24	30	48	450 @ 225	15	92	128	25	1.5	3.5	12320	4620
HV–363	138	81.38	34	30	54	3.0	2.0	72	24	30	48	360 @ 225	15	146	195	25	1.5	3.5	10990	4620
HS–603	162	82.25	40	36	54	3.0	2.0	73.25	29.75	36	48	600 @ 300	20	183	276	35	1.5	6.5	16950	6140
HS–813	186	83.75	46	42	54	3.0	2.0	74.5	35.75	42	48	810 @ 405	27	203	286	45	1.5	7	23440	8500



TOP VIEW



PARALLEL AND ALTERNATING TRIPLEX INSTALLATION



BOTTOM VIEW

Hi-Flo 55e

CAD File: Hi-Flo 55e Softener Triplex.dwg

DO NOT SCALE DRAWING TOLERANCES: ±1/8" UNLESS OTHERWISE NOTED				
Let.	Change	By	App	Date

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME HI–FLO®55e HS–152 TO HS–813
HI–VELOCITY HV–122 TO 363
AUTOMATIC SOFTENERS

DETAILED BY:	APP. BY:	SHEET
KMR 12/03/03		1 OF 1
REF. NO.		PART NO. S55_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.

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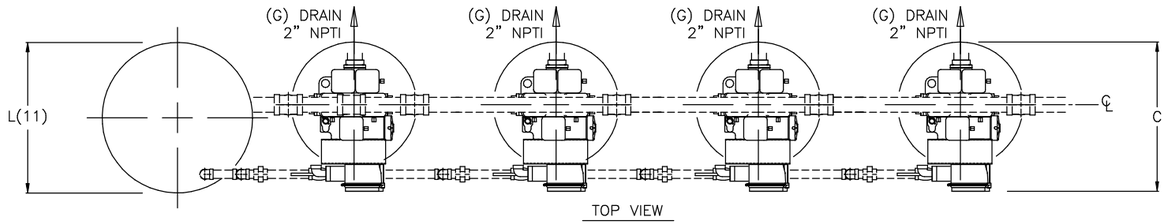
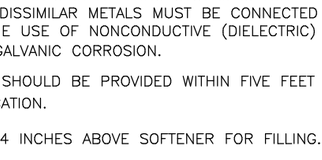
(11) BRINE TANK DIMENSIONS SHOWN ARE FOR THE BRINE TANK MOST COMMONLY SELECTED FOR USE WITH THIS SIZE SYSTEM.

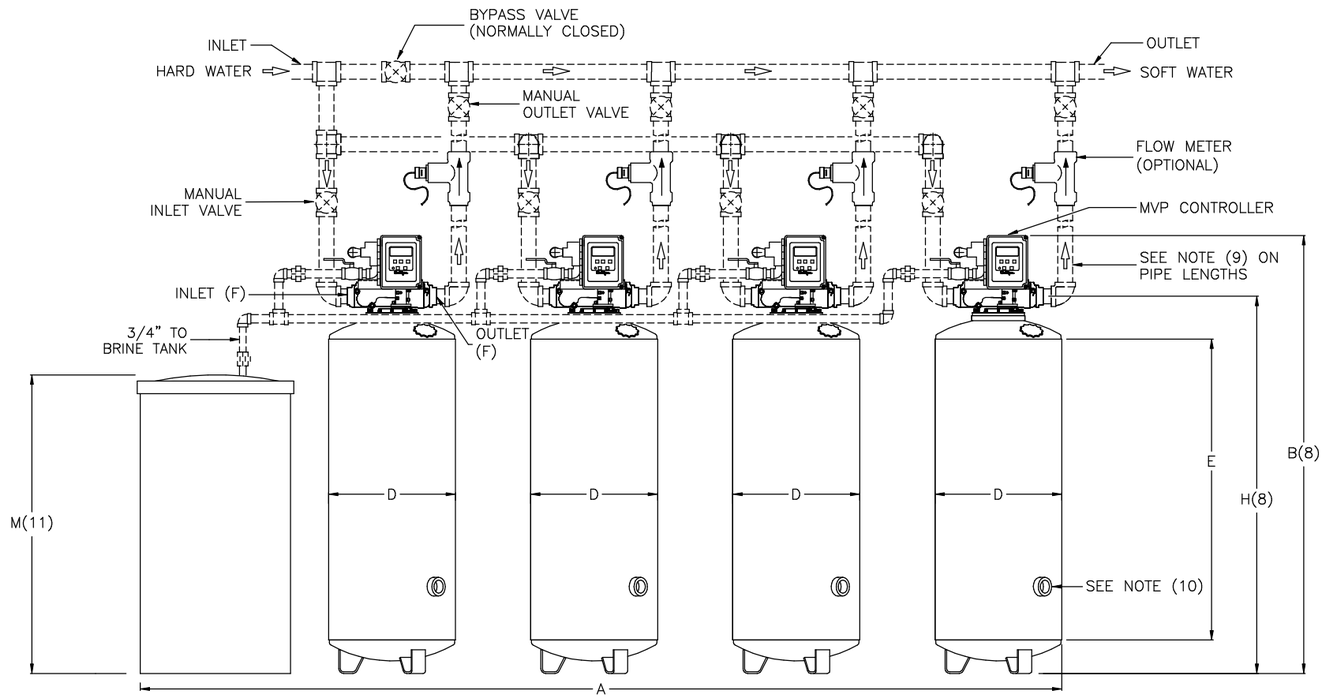
	DIMENSIONS (INCHES)											UNIT DATA PER TANK								
MODEL	WIDTH A	HEIGHT B(8)	DEPTH C	TANK DIA. D	SIDE–SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H(8)	BOLT HOLE CIRCLE K	BRINE TANK DIA. L(11)	BRINE TANK HEIGHT M(11)	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft^3	CONTINUOUS 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.
HS–152	128	71.00	28	20	48	2.0	2.0	61.75	14	24	48	150 @ 75	5	69	97	10	1.5	2.75	6805	2800
HV–122	128	71.00	28	20	48	2.0	2.0	61.75	14	24	48	120 @ 75	5	72	98	10	1.5	2.75	5815	2800
HS–242	144	73.00	28	24	48	2.0	2.0	64	18	24	48	240 @ 120	8	73	103	15	1.5	2	9365	3720
HV–193	144	73.00	28	24	48	3.0	2.0	64	18	24	48	192 @ 120	8	120	169	15	1.5	2	7805	3720
HS–302	174	75.25	34	30	48	2.0	2.0	66	24	30	48	300 @ 150	10	98	137	25	1.5	10	14970	5200
HS–452	174	81.38	34	30	54	2.0	2.0	72	24	30	48	450 @ 225	15	92	128	25	1.5	3.5	16380	6320
HV–363	174	81.38	34	30	54	3.0	2.0	72	24	30	48	360 @ 225	15	146	195	25	1.5	3.5	14385	6320
HS–603	204	82.25	40	36	54	3.0	2.0	73.25	29.75	36	48	600 @ 300	20	183	276	35	1.5	6.5	22375	8400
HS–813	234	83.75	46	42	54	3.0	2.0	74.5	35.75	42	48	810 @ 405	27	203	286	45	1.5	7	30960	11600



TOP VIEW



BOTTOM VIEW



PARALLEL AND ALTERNATING QUAD INSTALLATION

Hi-Flo 55e

CAD File: Hi-Flo 55e Softener Quad.dwg

DO NOT SCALE DRAWING
TOLERANCES: ±1/8" UNLESS OTHERWISE NOTED

Let.	Change	By	App	Date

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME HI–FLO®55e HS–152 TO HS–813
HI–VELOCITY HV–122 TO 363
AUTOMATIC SOFTENERS

DETAILED BY:	APP. BY:	SHEET
KMR 12/03/03		1 OF 1

REF. NO.	PART NO.
	S55_4