More

Culligan®

Culligan® Heavy Duty Industrial 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® 50 Industrial Water 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 2,000,000 grains per tank. Continuous flow rates up to 240 gpm per tank.
- Regeneration initiation by choice of time clock, meter or Aqua-Sensor® inputs.
- Side-Mounted Control 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.

Trust The Water Experts®

Culligan's Hi-Flo® 50 Industrial 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.
- 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 – 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 volume based regeneration initiation.

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

Warranty

Culligan's *Hi-Flo* 50 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:	120 Volts /60hz 220 Volts /50hz
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.

Model	Resin Qty. (Ft^3)	Pipe Size	Flow Rate**** Gallons Per Minute		Tank Size***	
			Continuous*	Peak**	Softener	Brine
HS-1203	40	3”	138	230	48” x 60”	48” x 60”
HS-1503	50	3”	160	230	54” x 60”	48” x 60”
HS-1504	50	4”	208	320	54” x 60”	48” x 60”
HS-2004	67	4”	240	363	60” x 60”	60” x 60”

*Flow rate at a 15 psi pressure loss.
**Flow rate at a 15 psi pressure loss.
***Dimensions are diameter by tank height.
****Per Softener Tank

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

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

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MOORE PART NO. 34743

ISO 9001 Certification

More

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 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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Printed in USA (5/03)
MOORE PART NO. 46968

MVP Controller

ISO 9001 Certification

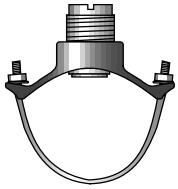
* *Aqua-Sensor:* Patent # US 5,699,272

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

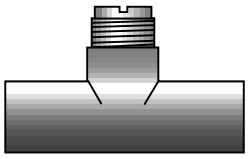
Check for compliance with state and local laws and regulations. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Systems certified for cyst reduction may be used on disinfected waters that may contain filterable cysts.

THE XLF FLOW SENSOR PACKAGE

XLF Flow Sensor

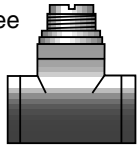


Iron Saddle

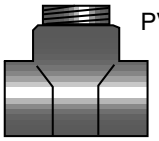


Copper/Bronze Tees

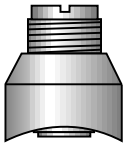
Iron Tee



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:

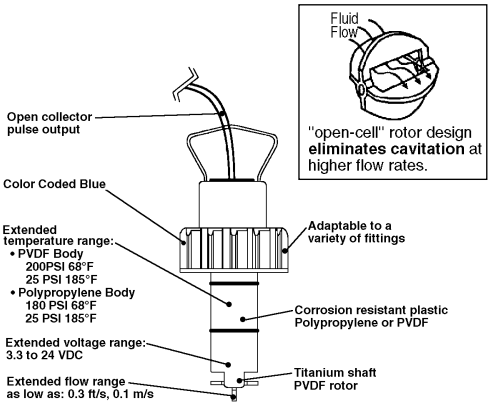
- Threaded galvanized
- Copper sweat
- PVC; CPVC
- Iron
- Steel

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).

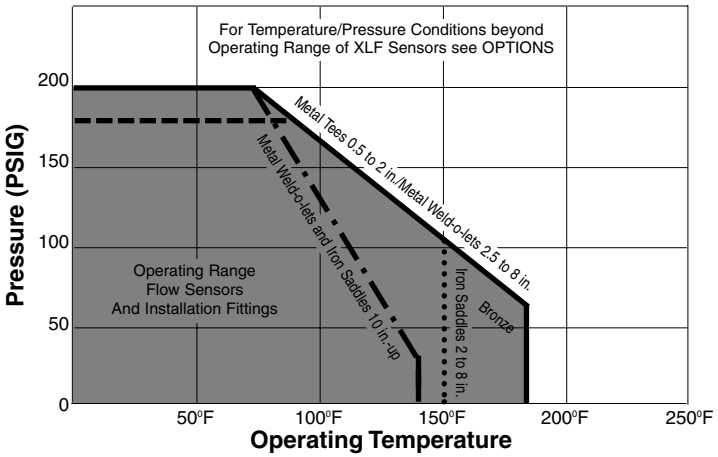
Flow Sensor Application Data

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.)

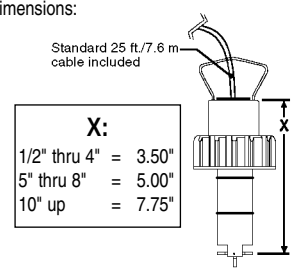
Specifications

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.

bruner by Culligan™

Commercial Systems

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SL-0064
Moore Part No. 49004

Hi-Flo® 50

Automatic Water Softeners

Specifications and Operating Data

MODELS		HS-1203	HS-1503	HS-1504	HS-2004	HS-2806	HS-3606
Maximum	gr	1,200	1,500	1,500	2,000	2,800	3,600
Exchange	@ lb	@ 600	@ 750	@ 750	@ 1,005	@ 1,400	@ 1,800
Capacity[1]	g	77.8	97.2	97.2	130	181	233
@ Salt Dosage	@ kg	@ 272	@ 340	@ 340	@ 456	@ 635	@ 816
Minimum	gr	800	1,000	1,000	1,333	1,867	2,400
Exchange	@ lb	@ 240	@ 300	@ 300	@ 402	@ 560	@ 720
Capacity[1]	g	51.8	65	65	86	121	156
@ Salt Dosage	@ kg	@ 109	@ 136	@ 136	@ 182	@ 254	@ 327
Peak[2]	gpm	230	230	320	400	560	760
Service	@ psi	@ 15	@ 14	@ 15	@ 18	@ 12	@ 13
Flow Rate @	m^3/hr	52	52	73	91	130	170
Pressure Drop	kPa	@ 100	@ 100	@ 100	@ 120	@ 83	@ 90
Continuous	gpm	150	160	190	240	340	460
Service	@ psi	@ 8	@ 7	@ 6	@ 7	@ 5	@ 5
Flow Rate @	m^3/hr	34	36	43	55	77	100
Pressure Drop	kPa	@ 55	@ 48	@ 41	@ 48	@ 34	@ 34
Pipe Size	in	3	3	4	4	6	6
Resin Quantity	ft^3	40	50	50	67	94	120
	L	1.13	1.42	1.42	1.90	2.67	3.40
Softener,	in	48 x 60	54 x 60	54 x 60	60 x 60	72 x 60	84 x 60
Tank Size	mm	1200 x 1500	1400 x 1500	1400 x 1500	1500 x 1500	1800 x 1500	2100 x 1500
Brine, Tank Size	in	48 x 60	48 x 60	48 x 60	60 x 60	72 x 60	72 x 60
	mm	1200 x 1500	1200 x 1500	1200 x 1500	1500 x 1500	1800 x 1500	1800 x 1500
Approximate	lb	5,800	7,400	7,800	9,600	14,300	21,400
Shipping Weight	kg	2,630	3,360	3,540	4,550	6,490	9,710

1 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 rates not exceeding 20 gpm per square foot (49 m/hr) of bed area. 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.

Culligan®

Commercial Systems

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Printed in USA Rev. 4/00
DCO 992587
SL-0076

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 HARNESS 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.

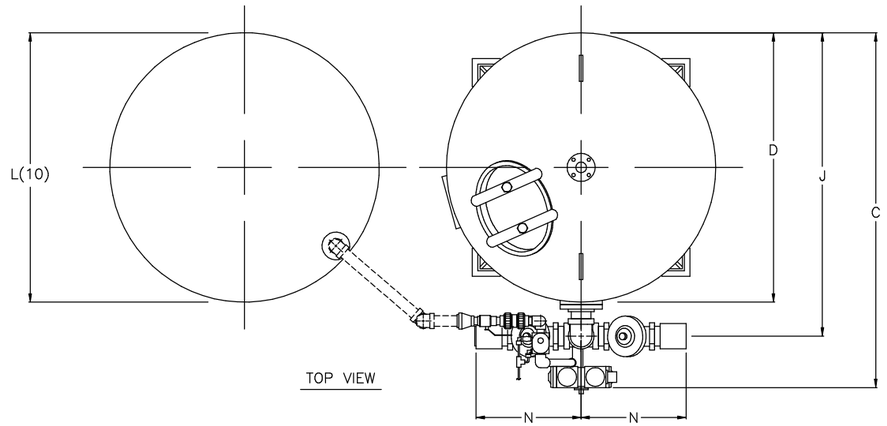
(7) TO PERMIT THE OBSERVATION OF THE DRAIN FLOW DO NOT MAKE A DIRECT CONNECTION TO THE DRAIN. PROVIDE AN AIR GAP OF AT LEAST FOUR TIMES THE DIAMETER OF THE DRAIN PIPE OR CONFORM TO LOCAL SANITATION CODES.

(8) 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.

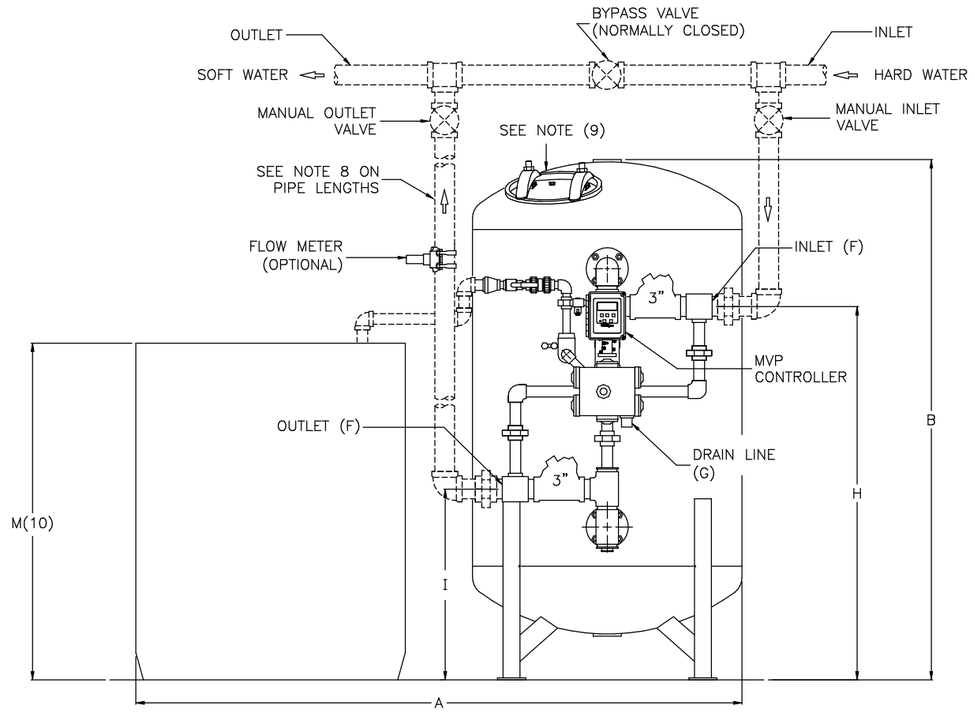
(9) ACCESS OPENINGS SHOWN ON TANK ARE FOR REFERENCE ONLY. QUANTITY, TYPE AND PLACEMENT ARE DEPENDENT ON TANK SIZE.

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

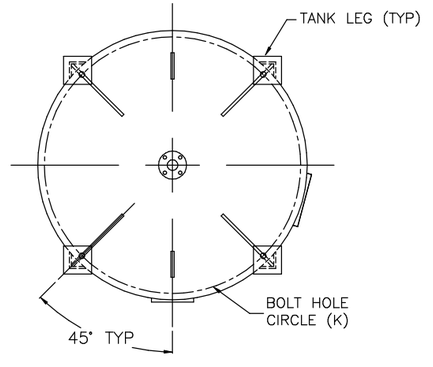
	DIMENSIONS (INCHES)																			
MODEL	WIDTH A	HEIGHT B	DEPTH C	TANK DIA. D	SIDE–SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H	FLOOR TO OUTLET I	BACK TO INLET/OUTLET J	BOLT HOLE CIRCLE K	BRINE TANK DIA. L(10)	BRINE TANK HEIGHT M(10)	INLET/ OUTLET OFFSET N	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft^3	CONTINUOUS FLOW gpm @ psi drop	PEAK FLOW gpm @ psi drop	DRAIN FLOW gpm	MIN. DRAIN PIPE SIZE IN.	SIMPLEX OPER. WT. lbs.	SIMPLEX SHIP. WT. lbs.
HS–1203	108	93	65	48	60	3.0	1.5	67.0	34.0	54.0	45.7	48	60	19	1200 @ 600	40	150 @ 8	230 @ 15	60	2.0	12800	5800
HS–1503	114	96	71	54	60	3.0	1.5	68.0	35.0	60.0	51.7	48	60	19	1500 @ 750	50	160 @ 7	230 @ 14	70	2.0	15400	7400



TOP VIEW



SINGLE INSTALLATION



BOTTOM VIEW

Hi-Flo 50 - 3"

CAD File: Hi-Flo 50 Softener Single 3in.dwg

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

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME: HI–FLO® 50 SOFTENERS MODELS 1203–1503 TECHNICAL DATA SHEET

DETAILED BY:	APP. BY:	SHEET
KMR 8/12/03		1 OF 1

REF. NO.	PART NO.
	S50_3_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 HARNESS 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.

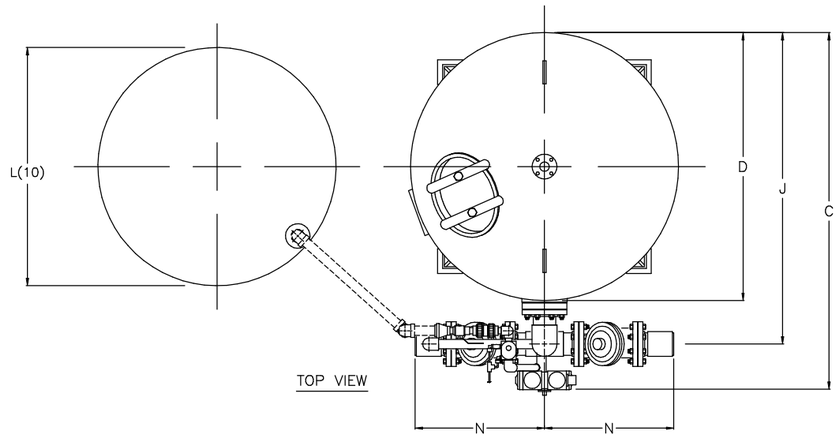
(7) TO PERMIT THE OBSERVATION OF THE DRAIN FLOW DO NOT MAKE A DIRECT CONNECTION TO THE DRAIN. PROVIDE AN AIR GAP OF AT LEAST FOUR TIMES THE DIAMETER OF THE DRAIN PIPE OR CONFORM TO LOCAL SANITATION CODES.

(8) 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.

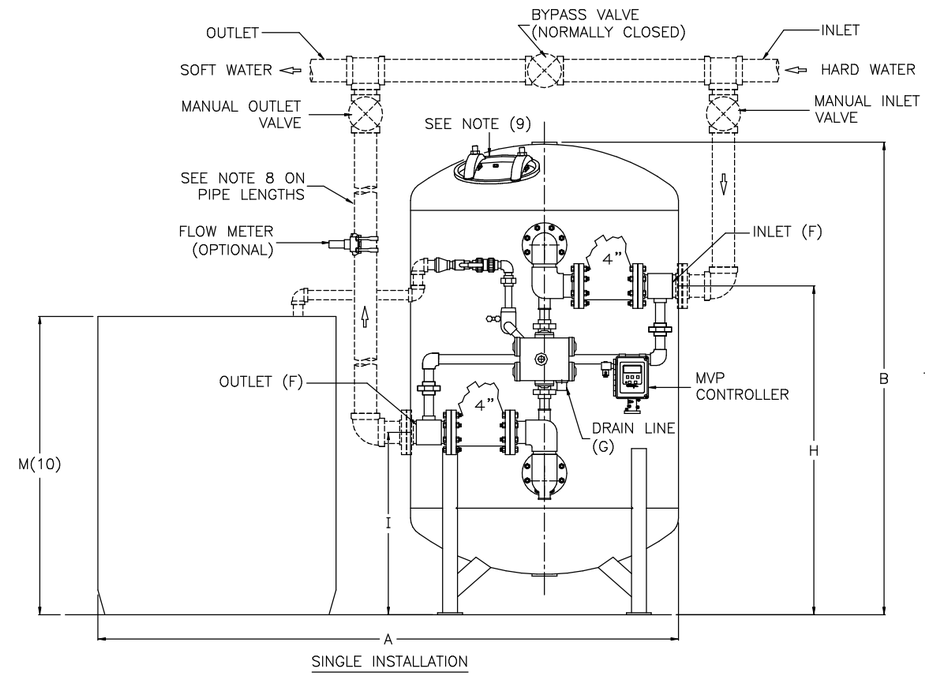
(9) ACCESS OPENINGS SHOWN ON TANK ARE FOR REFERENCE ONLY. QUANTITY, TYPE AND PLACEMENT ARE DEPENDENT ON TANK SIZE.

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

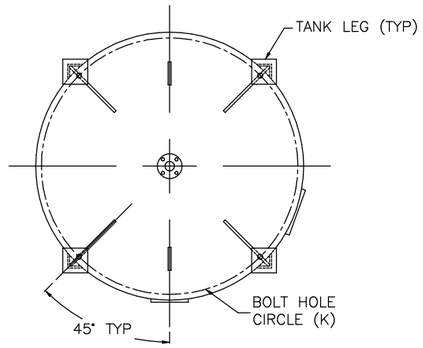
	DIMENSIONS (INCHES)																				
MODEL	WIDTH A	HEIGHT B	DEPTH C	TANK DIA. D	SIDE–SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H	FLOOR TO OUTLET I	BACK TO INLET/OUTLET J	BOLT HOLE CIRCLE K	BRINE TANK DIA. L(10)	BRINE TANK HEIGHT M(10)	INLET/ OUTLET OFFSET N	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft^3	CONTINUOUS FLOW gpm @ psi drop	PEAK FLOW gpm @ psi drop	DRAIN FLOW gpm	MIN. DRAIN PIPE SIZE IN.	SIMPLEX OPER. WT. lbs.	SIMPLEX SHIP. WT. lbs.
HS–1504	114	96	73	54	60	4.0	1.5	66.0	37.0	62.0	51.7	48	60	26	1500 @ 750	50	190 @ 6	320 @ 15	70	2.0	15800	7800
HS–2004	132	98	78	60	60	4.0	1.5	67.0	38.0	67.0	57.63	60	60	26	2000 @ 1005	67	240 @ 7	400 @ 18	90	2.0	20900	9600



TOP VIEW



SINGLE INSTALLATION



BOTTOM VIEW

Hi-Flo 50 - 4"

CAD File: Hi-Flo 50 Softener Single 4in.dwg

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

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME
HI–FLO® 50 SOFTENERS
MODELS 1504–2004
TECHNICAL DATA SHEET

DETAILED BY:	APP. BY:	SHEET
KMR 8/28/03		1 OF 1
REF. NO.		PART NO. S50_4_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.

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(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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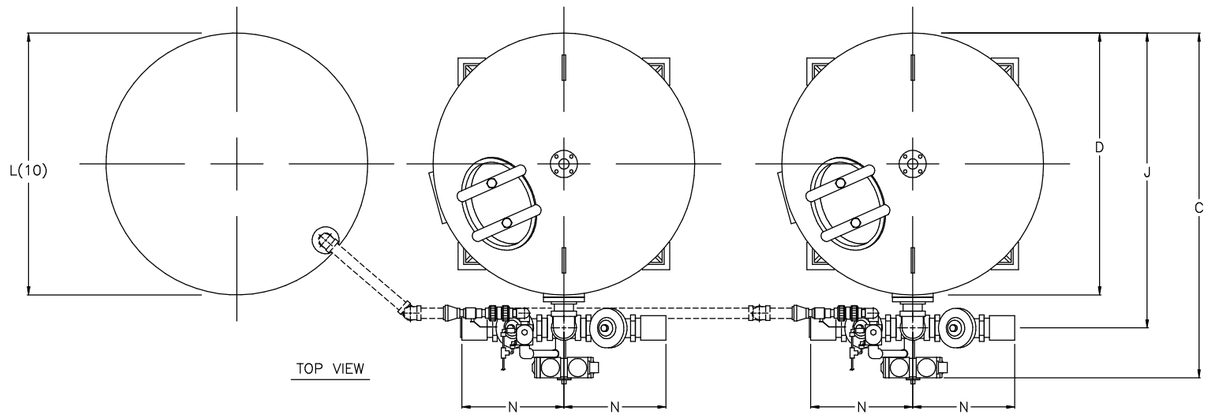
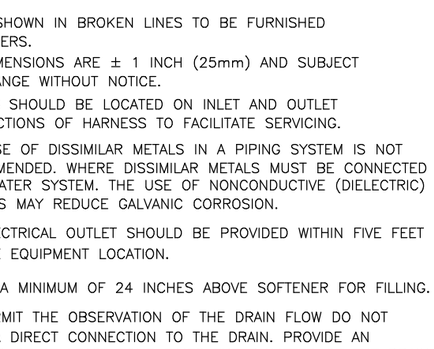
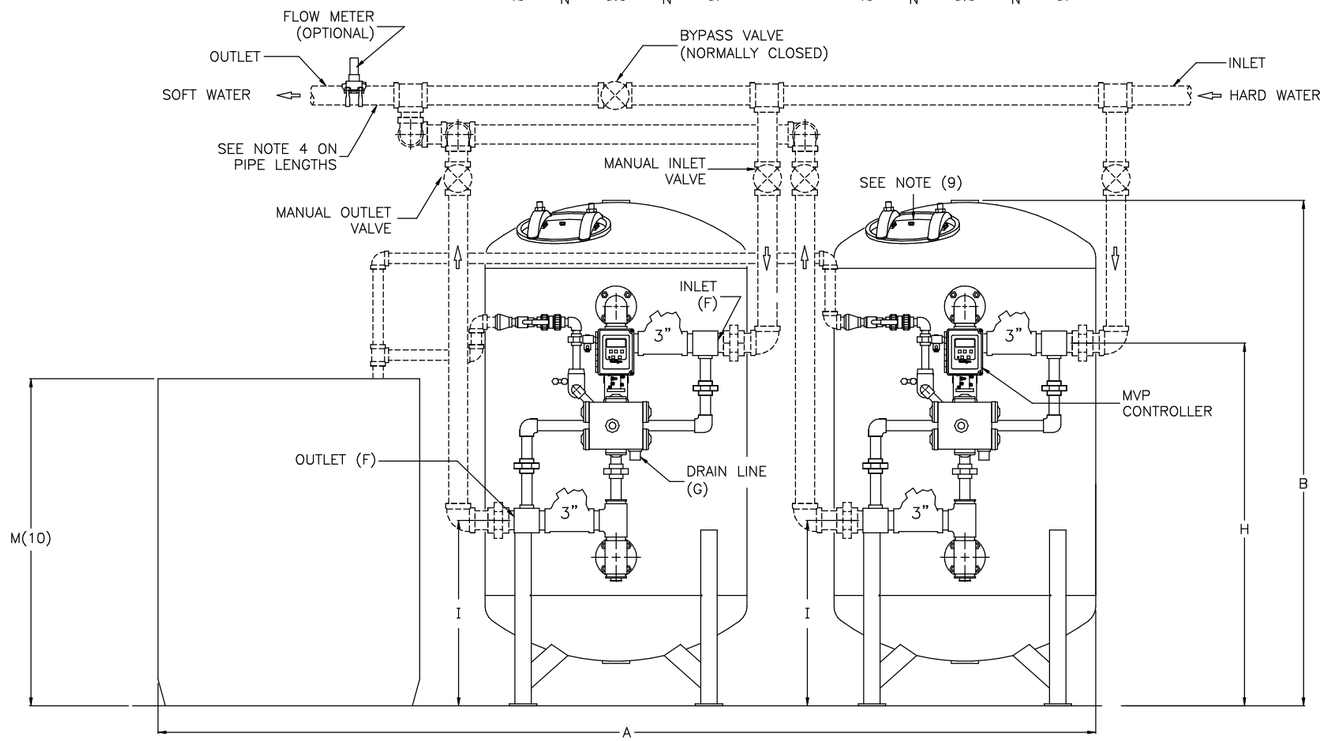
	DIMENSIONS (INCHES)														UNIT DATA PER TANK							
MODEL	WIDTH A	HEIGHT B	DEPTH C	TANK DIA. D	SIDE–SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H	FLOOR TO OUTLET I	BACK TO INLET/OUTLET J	BOLT HOLE CIRCLE K	BRINE TANK DIA. L(10)	BRINE TANK HEIGHT M(10)	INLET/ OUTLET OFFSET N	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft^3	CONTINUOUS FLOW gpm @ psi drop	PEAK FLOW gpm @ psi drop	DRAIN FLOW gpm	MIN. DRAIN PIPE SIZE IN.	DUPLEX OPER. WT. lbs.	DUPLEX SHIP. WT. lbs.
HS–1203	168	93	65	48	60	3.0	1.5	67.0	34.0	54.0	45.7	48	60	19	1200 @ 600	40	150 @ 8	230 @ 15	60	2.0	23200	11400
HS–1503	180	96	71	54	60	3.0	1.5	68.0	35.0	60.0	51.7	48	60	19	1500 @ 750	50	160 @ 7	230 @ 14	70	2.0	28400	14600



TOP VIEW



BOTTOM VIEW



ALTERNATING DUPLEX INSTALLATION

Hi-Flo 50 - 3"

CAD File: Hi-Flo 50 Softener DA 3in.dwg

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

Let.	Change	By	App	Date

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME: HI–FLO® 50 SOFTENERS MODELS 1203–1503 TECHNICAL DATA SHEET

DETAILED BY:	APP. BY:	SHEET
KMR 8/12/03		1 OF 1

REF. NO.

PART NO. S50_3_2A

NOTES:

(1) ITEMS SHOWN IN BROKEN LINES TO BE FURNISHED BY OTHERS.

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	DIMENSIONS (INCHES)														UNIT DATA PER TANK							
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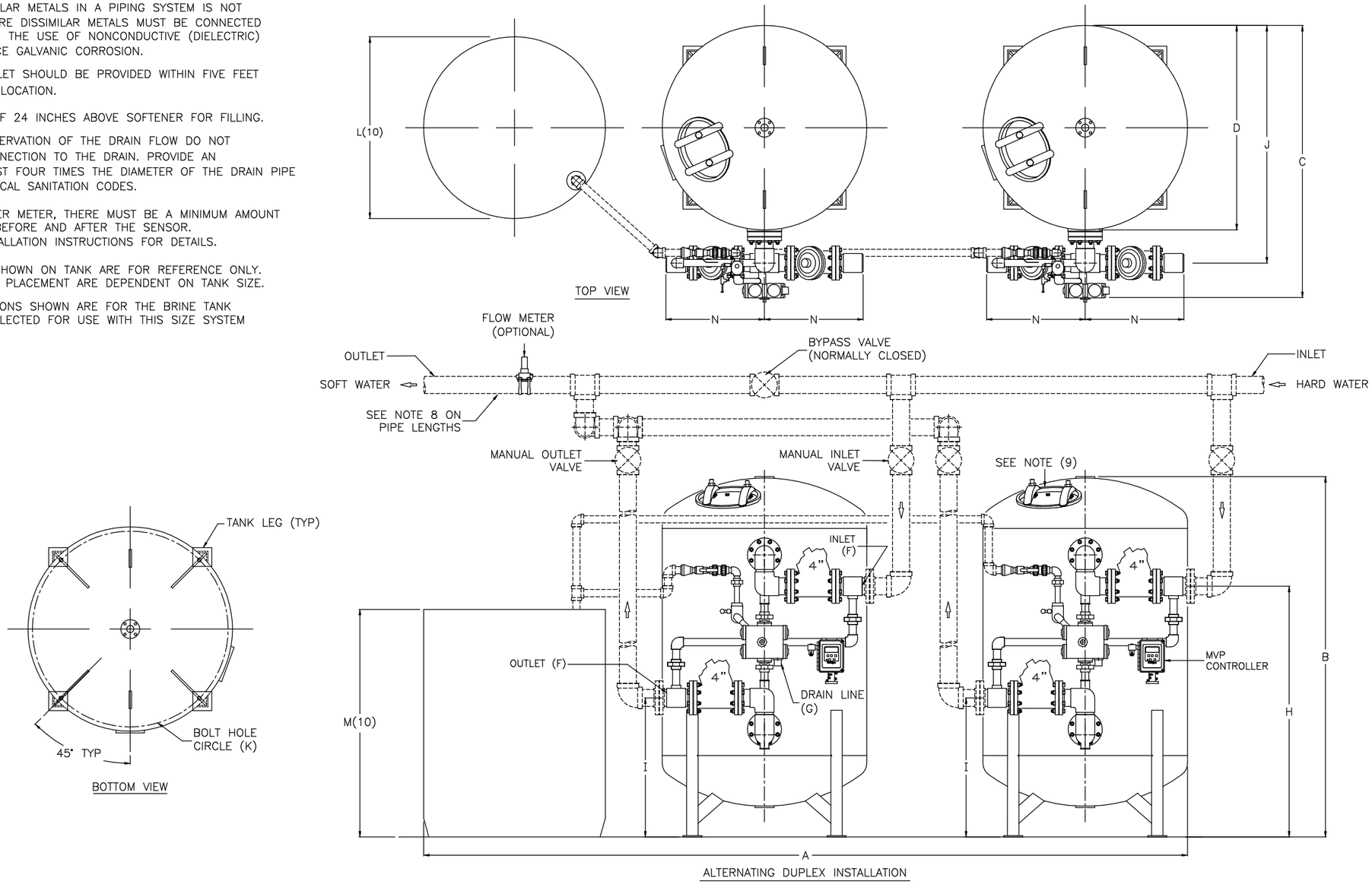
HS-1504	180	96	73	54	60	4.0	1.5	66.0	37.0	62.0	51.7	48	60	26	1500 @ 750	50	190 @ 6	320 @ 15	70	2.0	29500	15400
HS-2004	204	98	78	60	60	4.0	1.5	67.0	38.0	67.0	57.63	60	60	26	2000 @ 1005	67	240 @ 7	400 @ 18	90	2.0	37800	18900



Hi-Flo 50 - 4"

CAD File: Hi-Flo 50 Softener DA 4in.dwg

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

Let.	Change	By	App	Date

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME
HI-FLO® 50 SOFTENERS
MODELS 1504-2004
TECHNICAL DATA SHEET

DETAILED BY:	APP. BY:	SHEET
KMR 8/28/03		1 OF 1
REF. NO.	PART NO. S50_4_2A	

NOTES:

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HS–1203	168	93	65	48	60	3.0	1.5	67.0	34.0	54.0	45.7	48	60	19	1200 @ 600	40	150 @ 8	230 @ 15	60	2.0	23200	11400
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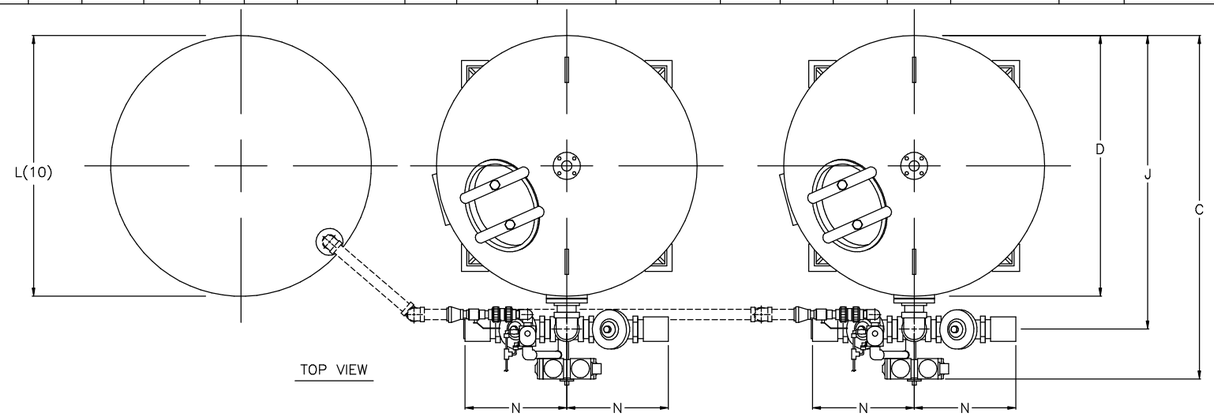
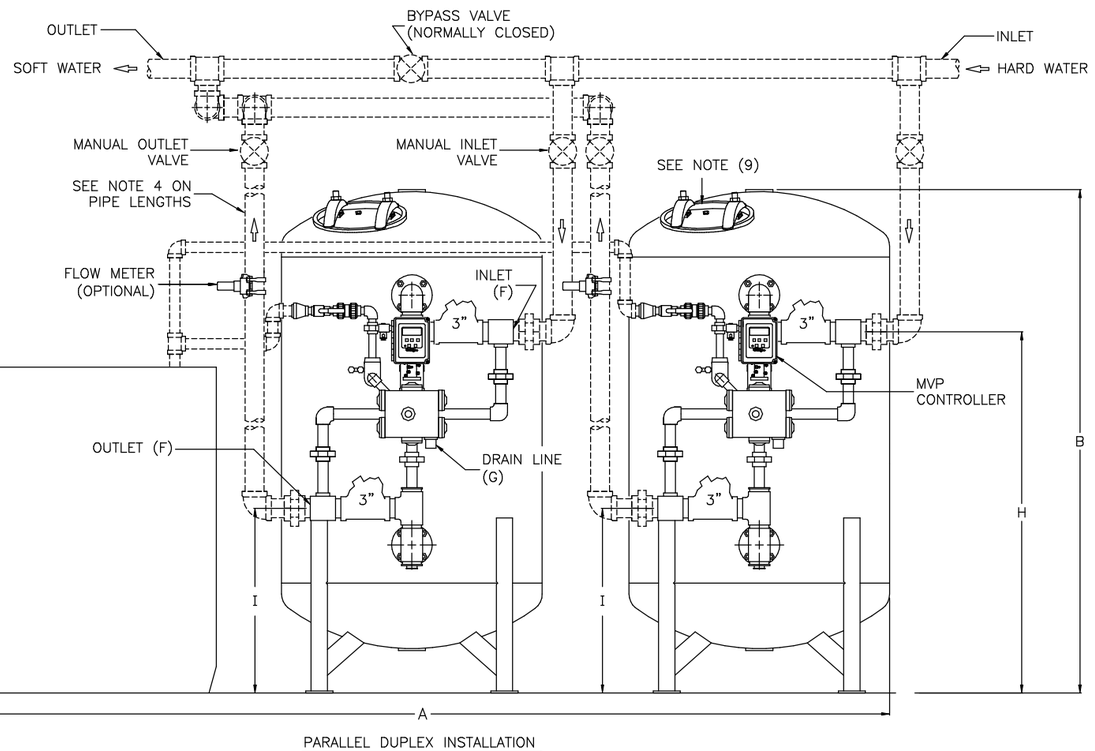
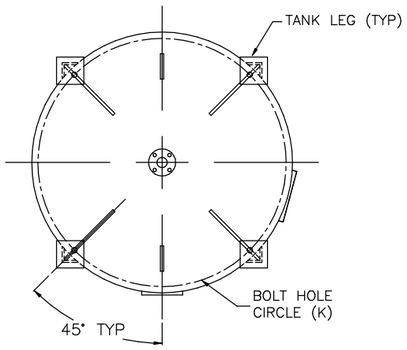


TOP VIEW



PARALLEL DUPLEX INSTALLATION



BOTTOM VIEW

Hi-Flo 50 - 3"

CAD File: Hi-Flo 50 Softener DP 3in.dwg

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

Let.	Change	By	App	Date

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME: HI–FLO® 50 SOFTENERS MODELS 1203–1503 TECHNICAL DATA SHEET

DETAILED BY:	APP. BY:	SHEET
KMR 8/12/03		1 OF 1

REF. NO.

PART NO. S50_3_2P

NOTES:

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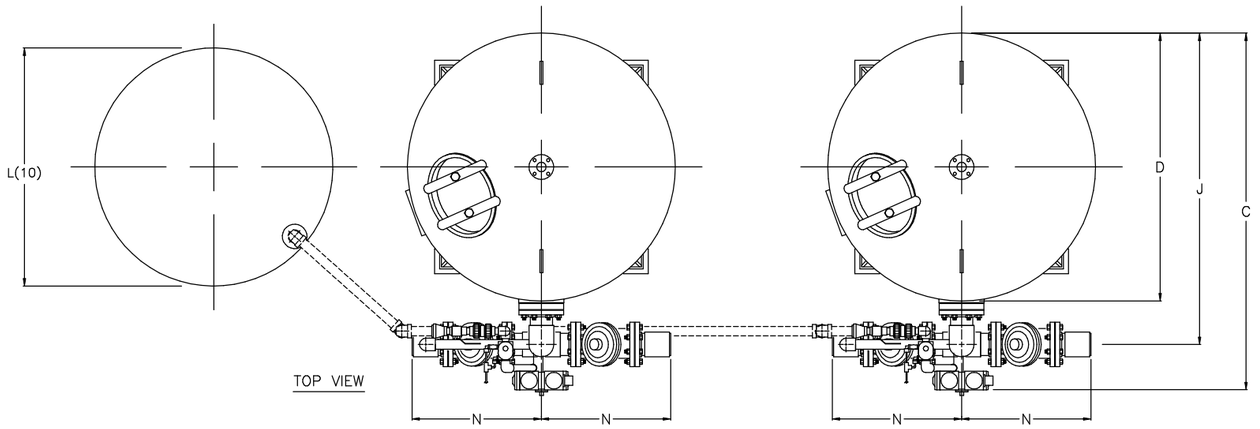
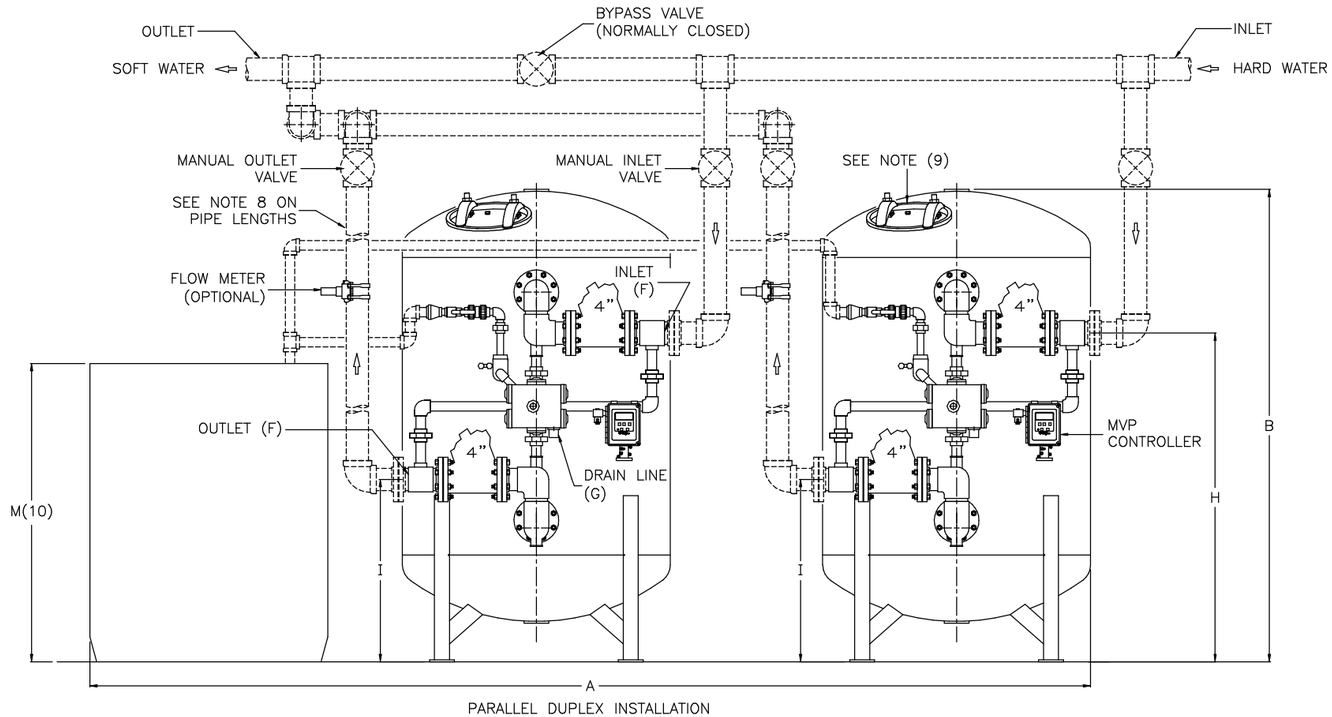
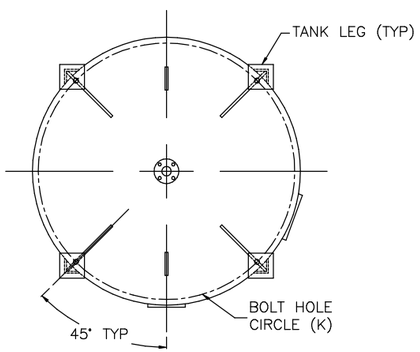




PARALLEL DUPLEX INSTALLATION



BOTTOM VIEW

Hi-Flo 50 - 4"

CAD File: Hi-Flo 50 Softener DP 4in.dwg

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

Let.	Change	By	App	Date

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME
HI–FLO® 50 SOFTENERS
MODELS 1504–2004
TECHNICAL DATA SHEET

DETAILED BY:	APP. BY:	SHEET
KMR 8/28/03		1 OF 1
REF. NO.	PART NO.	
	S50_4_2P	

NOTES:

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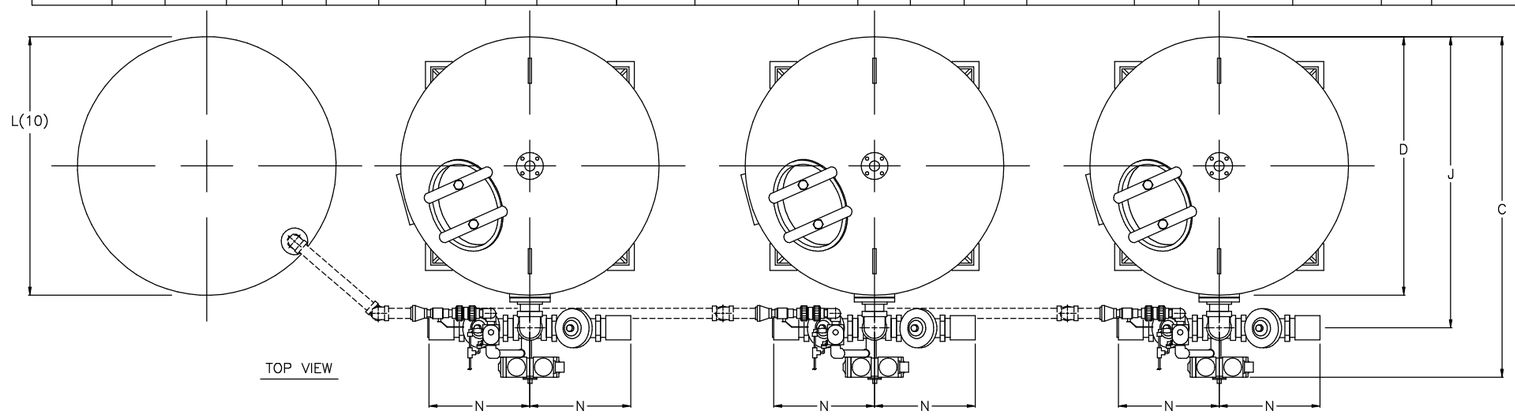
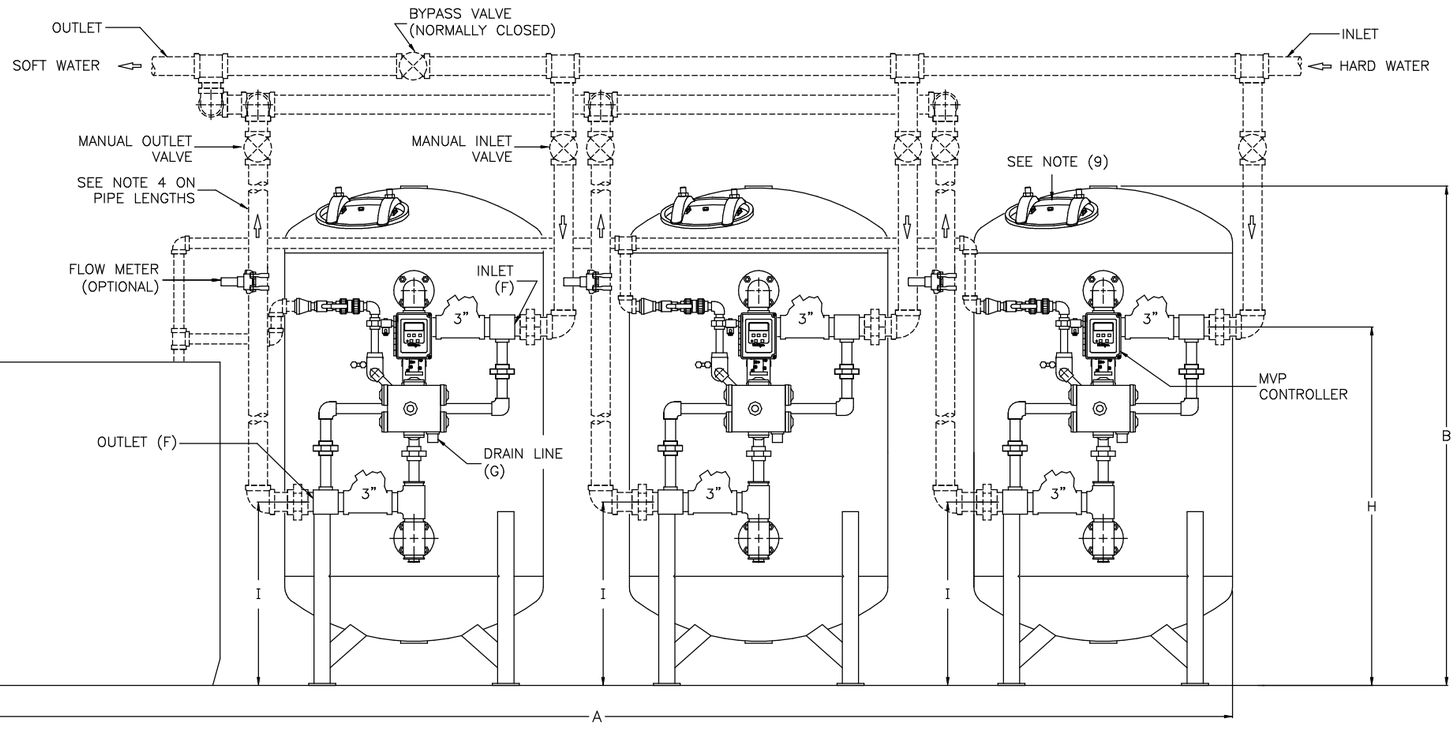
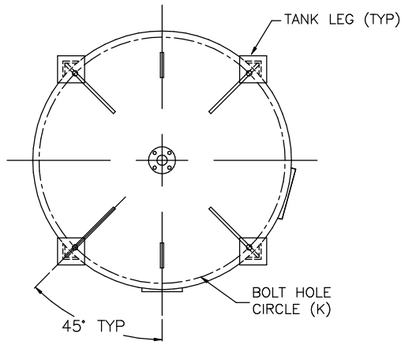
HS–1503	246	96	71	54	60	3.0	1.5	68.0	35.0	60.0	51.7	48	60	19	1500 @ 750	50	160 @ 7	230 @ 14	70	2.0	41400	21800



TOP VIEW



TRIPLEX INSTALLATION



BOTTOM VIEW

Hi-Flo 50 - 3"

CAD File: Hi-Flo 50 Softener Triplex 3in.dwg

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

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME: HI–FLO® 50 SOFTENERS MODELS 1203–1503 TECHNICAL DATA SHEET

DETAILED BY:	APP. BY:	SHEET
KMR 8/12/03		1 OF 1

REF. NO.	PART NO.
	S50_3_3

NOTES:

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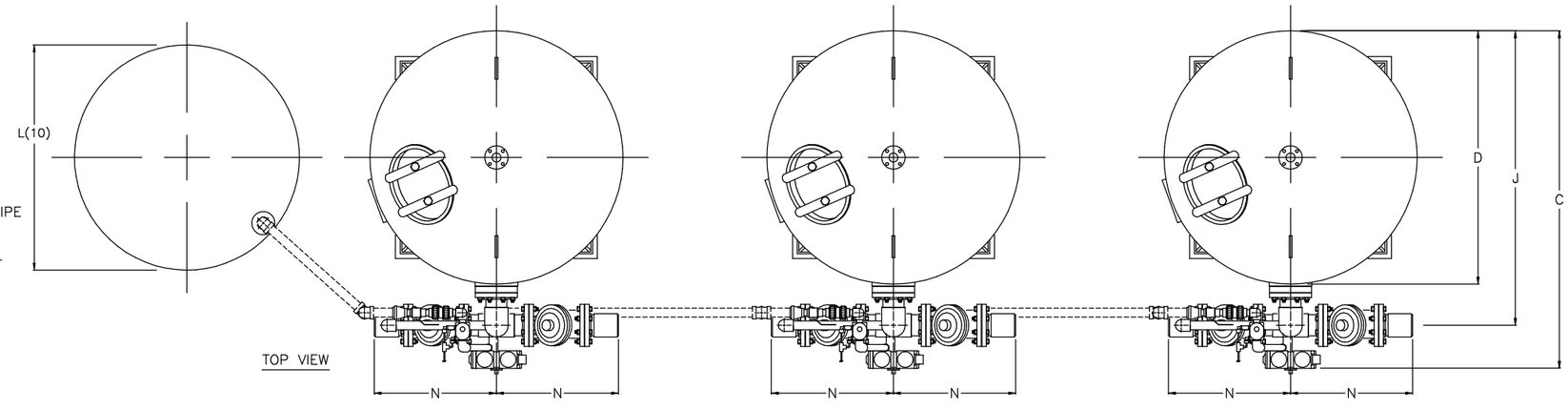
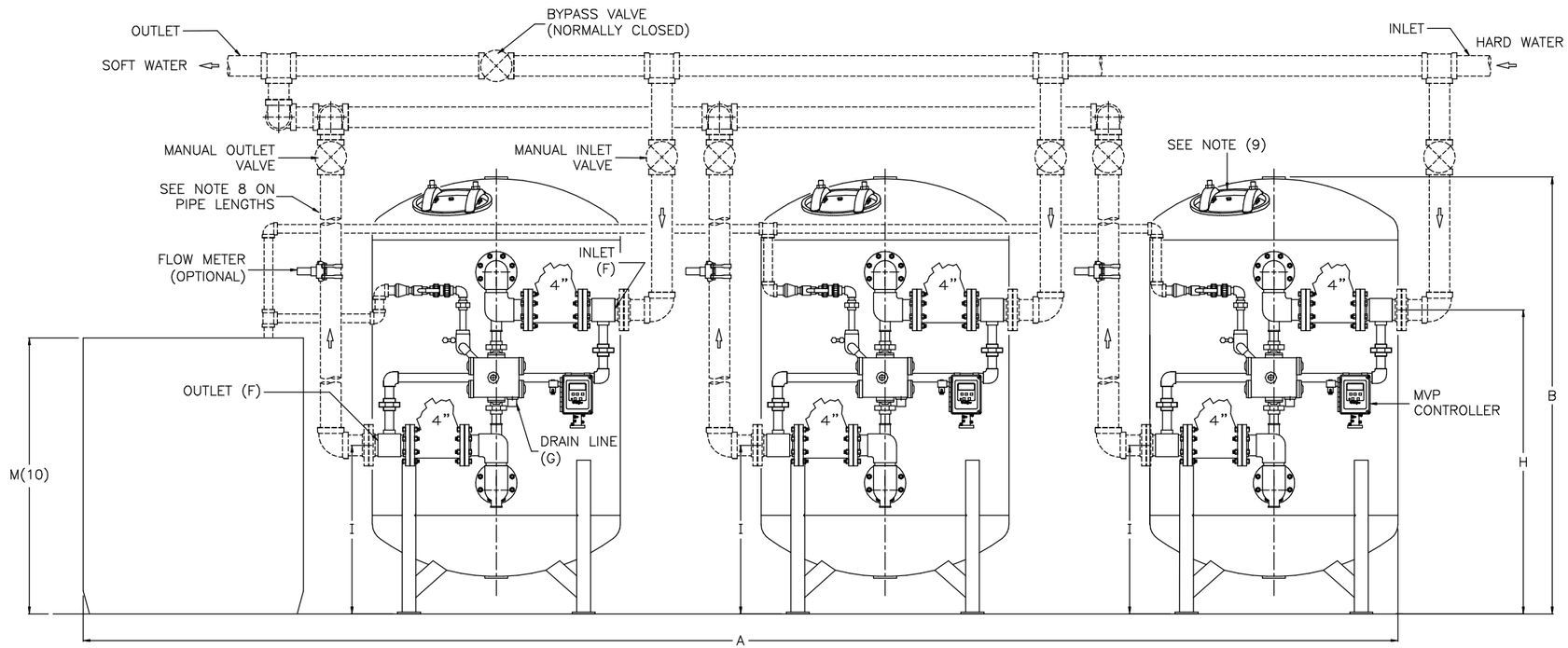
(8) WHEN USING A WATER METER, THERE MUST BE A MINIMUM AMOUNT OF STRAIGHT PIPE BEFORE AND AFTER THE SENSOR. REFER TO THE INSTALLATION INSTRUCTIONS FOR DETAILS.

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

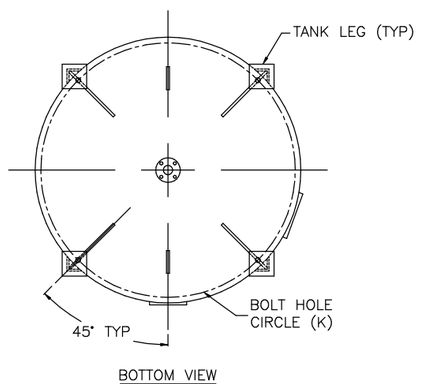
(10) BRINE TANK DIMENSIONS SHOWN ARE FOR THE BRINE TANK MOST COMMONLY SELECTED FOR USE WITH THIS SIZE SYSTEM

	DIMENSIONS (INCHES)														UNIT DATA PER TANK							
MODEL	WIDTH A	HEIGHT B	DEPTH C	TANK DIA. D	SIDE–SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H	FLOOR TO OUTLET I	BACK TO INLET/OUTLET J	BOLT HOLE CIRCLE K	BRINE TANK DIA. L(10)	BRINE TANK HEIGHT M(10)	INLET/ OUTLET OFFSET N	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft³	CONTINUOUS FLOW gpm @ psi drop	PEAK FLOW gpm @ psi drop	DRAIN FLOW gpm	MIN. DRAIN PIPE SIZE IN.	TRIPLEX OPER. WT. lbs.	TRIPLEX SHIP. WT. lbs.
HS–1504	246	96	73	54	60	4.0	1.5	66.0	37.0	62.0	51.7	48	60	26	1500 @ 750	50	190 @ 6	320 @ 15	70	2.0	43200	23000
HS–2004	276	98	78	60	60	4.0	1.5	67.0	38.0	67.0	57.63	60	60	26	2000 @ 1005	67	240 @ 7	400 @ 18	90	2.0	54700	28200





TRIPLEX INSTALLATION



BOTTOM VIEW

Hi-Flo 50 - 4"

CAD File: Hi-Flo 50 Softener Triplex 4in.dwg

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

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME: HI–FLO® 50 SOFTENERS MODELS 1504–2004 TECHNICAL DATA SHEET

DETAILED BY:	APP. BY:	SHEET
KMR 8/28/03		1 OF 1

REF. NO.

PART NO. S50_4_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 HARNESS 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.

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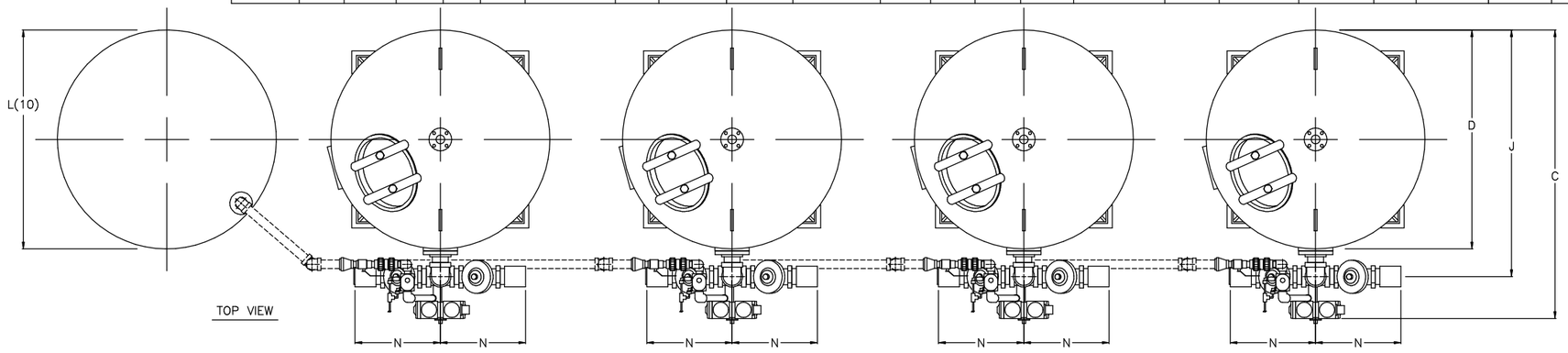
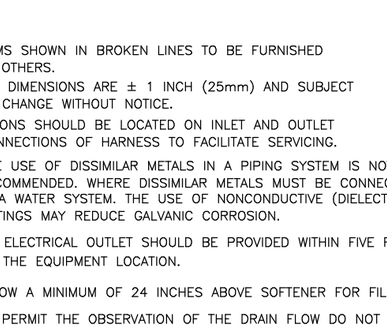
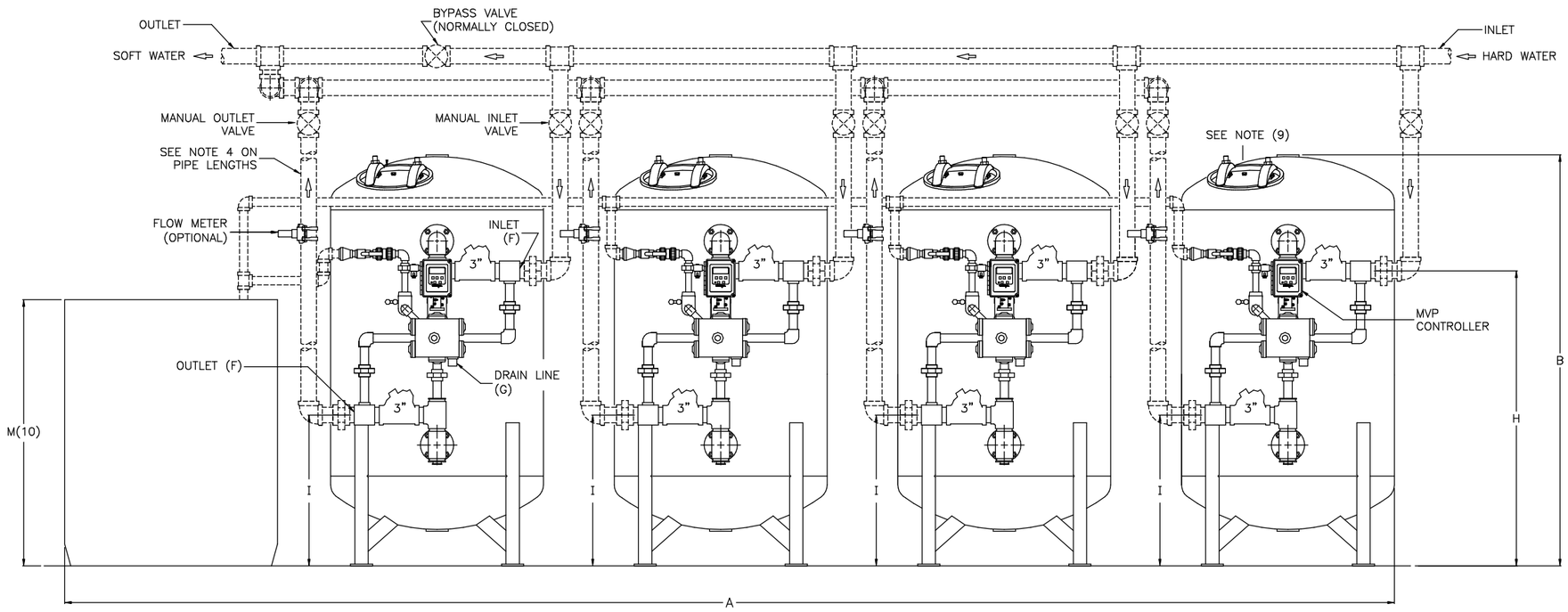
	DIMENSIONS (INCHES)														UNIT DATA PER TANK							
MODEL	WIDTH A	HEIGHT B	DEPTH C	TANK DIA. D	SIDE–SHELL E	INLET/OUTLET PIPE SIZES F	DRAIN SIZE G	FLOOR TO INLET H	FLOOR TO OUTLET I	BACK TO INLET/OUTLET J	BOLT HOLE CIRCLE K	BRINE TANK DIA. L(10)	BRINE TANK HEIGHT M(10)	INLET/ OUTLET OFFSET N	MAX. CAPACITY KGR @ SALT DOSAGE	RESIN VOLUME ft^3	CONTINUOUS FLOW gpm @ psi drop	PEAK FLOW gpm @ psi drop	DRAIN FLOW gpm	MIN. DRAIN PIPE SIZE IN.	QUAD OPER. WT. lbs.	QUAD SHIP. WT. lbs.
HS–1203	288	93	65	48	60	3.0	1.5	67.0	34.0	54.0	45.7	48	60	19	1200 @ 600	40	150 @ 8	230 @ 15	60	2.0	44000	23200
HS–1503	312	96	71	54	60	3.0	1.5	68.0	35.0	60.0	51.7	48	60	19	1500 @ 750	50	160 @ 7	230 @ 14	70	2.0	54400	29600



TOP VIEW



BOTTOM VIEW



QUAD INSTALLATION

Hi-Flo 50 - 3"

CAD File: Hi-Flo 50 Softener Quad 3in.dwg

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

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME: HI–FLO® 50 SOFTENERS MODELS 1203–1503 TECHNICAL DATA SHEET

DETAILED BY:	APP. BY:	SHEET
KMR 8/12/03		1 OF 1
REF. NO.	PART NO. S50_3_4	

NOTES:

(1) ITEMS SHOWN IN BROKEN LINES TO BE FURNISHED BY OTHERS.

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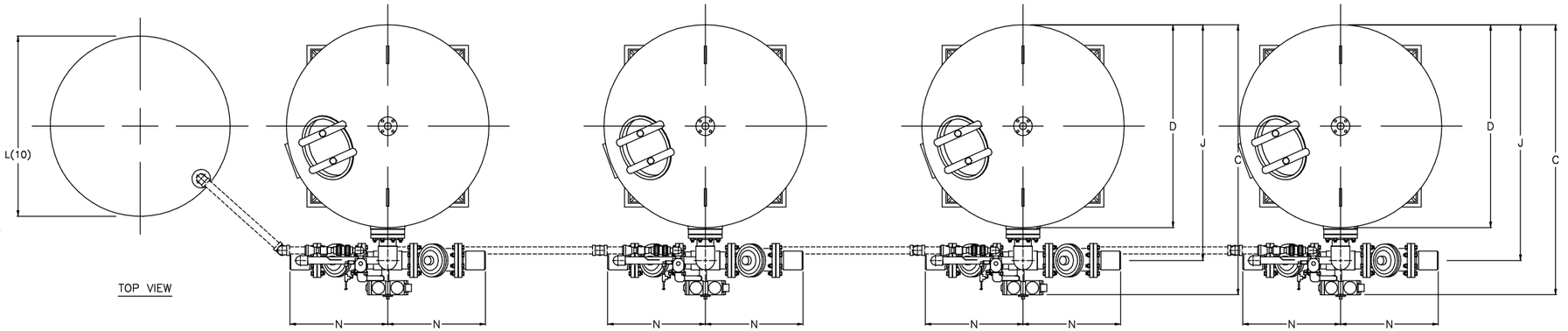
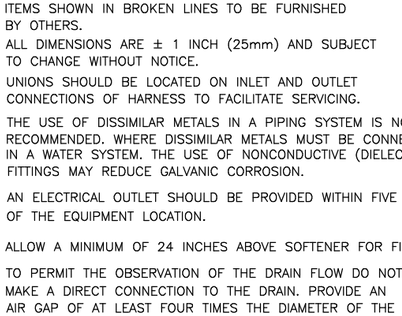
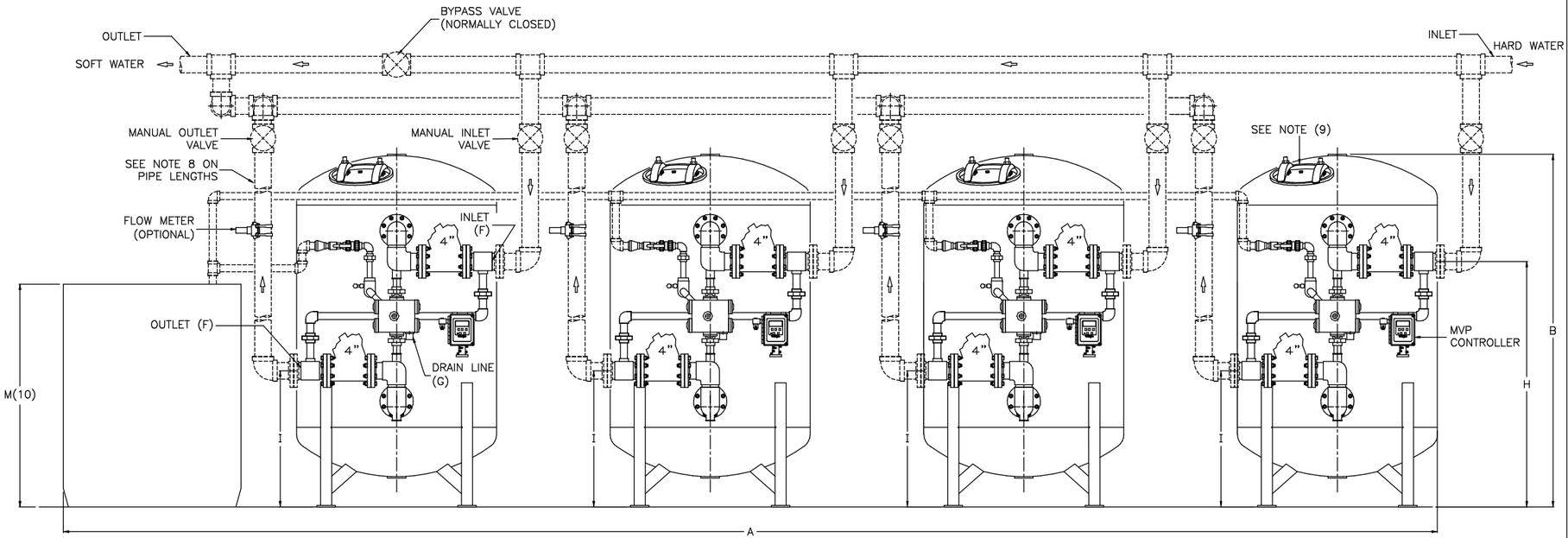
HS-1504	312	96	73	54	60	4.0	1.5	66.0	37.0	62.0	51.7	48	60	26	1500 @ 750	50	190 @ 6	320 @ 15	70	2.0	56900	31200
HS-2004	348	98	78	60	60	4.0	1.5	67.0	38.0	67.0	57.63	60	60	26	2000 @ 1005	67	240 @ 7	400 @ 18	90	2.0	71600	38400



TOP VIEW



BOTTOM VIEW



QUAD INSTALLATION

Hi-Flo 50 - 4"

CAD File: Hi-Flo 50 Softener Quad 4in.dwg

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

Let.	Change	By	App	Date

Culligan® ENGINEERED SYSTEMS
NORTHBROOK, ILLINOIS

NAME: HI-FLO® 50 SOFTENERS MODELS 1504-2004 TECHNICAL DATA SHEET

DETAILED BY:	APP. BY:	SHEET
KMR 8/28/03		1 OF 1

REF. NO.	PART NO.
	S50_4_4