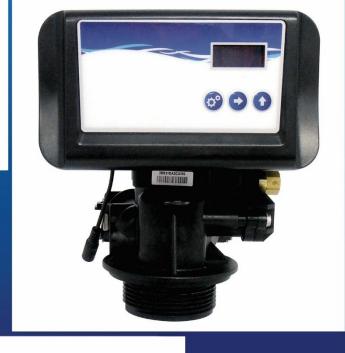




HD Service Manual







Contents

Record of System Specifications	2
Product Dimensions	3
Pre-Installation Checklist	4
System Installation	5-9
Installation Notice, Unit location, Plumbing Setup, Control Valve Installation Instructions	5
System Sizing, Bypass Installation Instructions	6
Plumbing Connections, Drain Line Installation, Brine Line Installation	7
Brine Tank Installation	8
System Installation Chart	9
HD Valve Programming	10-14
Sanitizing Procedure	15
Water Flow Diagram	16-18
Assembly Drawings and Parts List	19-27
HD-SMM & HD-FTC Valve Drive Assembly and Parts List	19-22
HD Valve Body Assembly and Parts List	23-24
Meter Assembly, Parts List, & Wiring Diagram	25
Bypass and Bypass Mixing Valve Assembly	26-27
Service Instructions	28-33
Replacing Brine Valve, Injectors, and Screen	28
Replacing Timer	29
Replacing Piston Assembly	30
Replacing Seals and Spacers	31
Replacing Meter	32
Replacing Meter Cover and Impeller	33
Trouble Shooting	34-37
Softener System Trouble Shooting	34-36
Filter System Trouble Shooting	37
Warranty	38
Contact Information	39

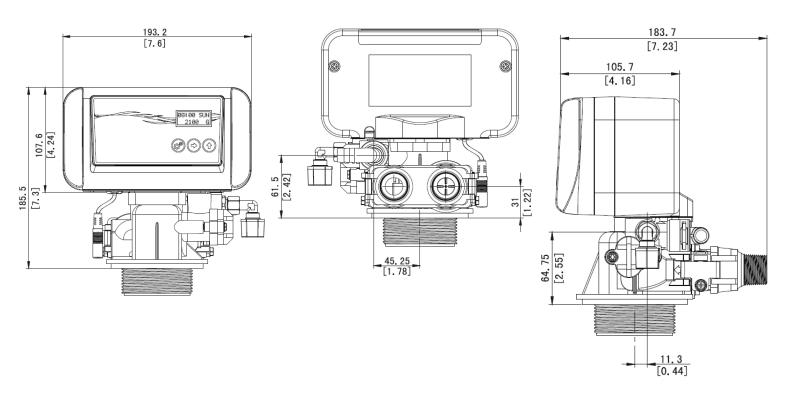
System Specifications

Fill in the content below for future reference.

installer		
Name:		
Address:		
Phone:	Install Date:	
Softener System Configuration		
Tank Size: Diain Heightin Resin Volume:cι	u/ft. Brine Tank Capacity: 🔲 85L 🔲 100L 🔲 130L	
Media:		
Control Valve Serial Number: (label located on valve body fron		
Valve Style: HD-FTC HD-SMM		
Day/Time of Regeneration:	Drain Line Flow Control (DLFC):	_gpm
Brine Line Flow Control (BLFC): gpm	Injector Size:	Sal
Setting: Meter	Gallon Setting: gal	
Water Conditions and Quality		
Total Hardness: grains	n Acid (pH):	
Pressure of Inlet Water: PSI Other:		
Water Source: Well Water City Water	Other:	

System Installation

HD-SMM Standard Digital Meter Control Valve Dimensions



Product Dimensions - HD Control Valves

		Width(max)	Height (max)	,	Regeneration Mode		
7.5"		4"	7.5"		Down-flow		
Inlet Port	Outlet Por	t Drain Port	Brine Port Base		Base	Riser Pipe	
3/4"	3/4"	1/2" NPTF	3/8"	2.5	"NPSM	1.05"	

Plumbing Rough-ins - HD Control Valves

Bypass	Tank center to end of bypass	Inlet/Outlet Center	Inlet/Outlet Height 9x48 Tank	Inlet/Outlet Height 10x44 Tank	Inlet/Outlet Height 10x54 Tank	Inlet/Outlet Height 12x52 Tank	Inlet/Outlet Height 13x54 Tank
1" Metal Bypass	5-3/8"	2"	50"	46-5/8"	56-3/4"	54-7/8"	56-7/8"
¾" Metal Bypass	5-1/4"	2"	50"	46-5/8"	56-3/4"	54-7/8"	56-7/8"
Plastic Bypass	6-3/8"	2"	50"	46-5/8"	56-3/4"	54-7/8"	56-7/8"

The dimensions are for reference only.

Pre-Installation Checklist

Before installation, read through this manual thoroughly. Then obtain all materials and tools needed for installation.

This softening system will operate at maximum efficiency when the following conditions are considered.

Required Operating Condition	ns:	
Working Conditions	Working Pressure	25psi~120psi
Working Conditions	Water Temperature	40 °F∼100 °F
	Environment Temperature	40 °F∼100 °F
Working Environment	Relative Humidity	≤95%
	Power Source	AC100~240V/50~60Hz

- All plumbing and electrical work should be performed by an accredited professional to ensure all local, state, and municipal
 guidelines are met.
- An uninterrupted alternating current (A/C) supply is required. Please make sure voltage supply is compatible with unit before installation.
- Conditions of existing plumbing should not be clogged with lime or iron build-up. Replace piping that has heavy lime and/or iron build-up. If there is an iron concern, install an iron filter unit ahead of the water softener. Plumbing that has heavy lime and iron buildup inhibits the operation of softening system.
- When there is moderate to high turbidity, a filter should be installed on the inlet before the water softening system.
- If the water pressure exceeds 120psi, a pressure reducing valve must be installed before the water inlet. If the water pressure exceeds 80 psi, installing a pressure reducing valve before the water inlet is highly recommended. If the water pressure is under 25psi, a booster pump must be installed before the water inlet.
- Ensure there is salt in the brine tank at all times when this valve is used for softening. The brine tank should contain clean water and softening salt only, at least 99.5% pure. Do not use small grain salt.
- Always install a bypass valve.
- Replacement parts for the valve should only be purchased through Hankscraft H20 Products resellers.
- Regular interval monitoring of the water quality and work environment is recommended to insure proper operation of the valve and system.



CAUTION

Do not exceed 120 psi water pressure. Do not exceed 40° C / 100° F water temperature. Do not subject unit to freezing conditions.

Failure to use this product within the described conditions may void the warranty

System Installation

Installation Notice

- > Before installation, read through this manual thoroughly and obtain all materials and tools needed for installation.
- All plumbing and electrical work should be performed by an accredited professional to ensure all local, state, and municipal guidelines are met.
- During cold weather it is recommended that the installer warm the valve to room temperature before operating.

Unit Location

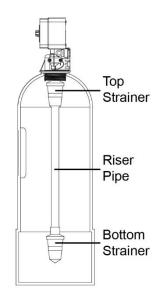
- Locate the filter or softener close to a clean working floor drain away from direct sunlight and any heat sources. This will minimize consumer impact in the event of malfunction.
- Ensure the unit is installed with enough space for operation and maintenance.
- The installation surface should be clean, level and stable for both the pressure tank and brine tank.

Plumbing and Mechanical Setup

- 1. Complete all plumbing according to local, state, and federal plumbing codes.
 - a. A ½" (13mm) minimum drain pipe should be used. However, if the backwash flow rates exceed 7gpm or the length exceeds 20 feet (6m) then a ¾" (19mm) drain pipe should be used.
 - b. There must be an air gap between the drain line and the drain to prevent siphoning of contaminated water back into the resin tank.
- 2. Use only Teflon tape on the drain fitting.
- 3. Solder joints should be completed prior to connecting piping to the valve. Solder joints near the drain must be done before connecting the Drain Line Flow Control fitting (DLFC). Leave at least 6" (152mm) between the DLFC and solder joints when soldering pipes that are connected on the DLFC. Failure to do this could cause interior damage to valve. The valve manufacturer is not responsible for damage incurred during installation.
- 4. When turning threaded pipe fittings onto plastic fitting, take precaution not to cross thread or over tighten.

Control Valve Installation

- 1. Cut the 1" (25mm) distributor tube (1.050 O.D.) flush with the top of the tank. Take care to keep foreign material out of mineral tank. If purchased as a complete system, the tube has already been cut and installed.
- 2. Insert distributor tube with lower basket into the center of the pressure tank.
- 3. Plug the riser pipe and fill the pressure tank with resin. If purchased as a complete system from Hankscraft H2O Products the media has been installed. Media quantity is relative to desired capacity and tank size.
- 4. Lubricate the valve center hub O-ring with silicone lubricant only.
- 5. Install the upper basket with a twist and lock action to center hub of the valve.
- 6. Lubricate, with silicone lubricant, and install the valve base O-ring around the neck of the valve.
- 7. Place valve on tank with the distributor tube inserted down the middle of the upper basket. Twist the valve on to the tank to secure valve to tank.



System Sizing Chart

Tank Size	Injector	Slow Rinse @ 40 psi	Brine Draw @ 40 psi	¹ BLFC	² DLFC
9"	#1 White	.45 gpm	.28 gpm	.25 gpm	2.0 gpm
10"	#1 White	.45 gpm	.38 gpm	.5 gpm	2.4 gpm
12"	#2 Blue	.84 gpm	.56 gpm	1.0 gpm	3.5 gpm
13"	#2 Blue	.84 gpm	.56 gpm	1.0 gpm	4.0 gpm
14"	#4 Green	1.0 gpm	.63 gpm	1.0 gpm	5.0 gpm
16"	#4 Green	1.0 gpm	.63 gpm	1.0 gpm	7.0 gpm

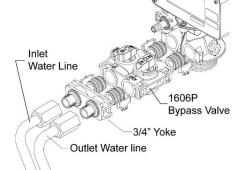
Note: Due to varying water conditions, tank sizes, and water pressures, use the above settings as guidelines only.

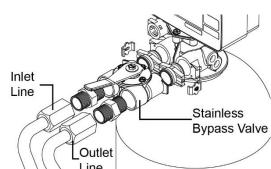
Bypass Installation

- ➤ Plastic Bypass 1606P
 - Grease bypass O-rings and press onto valve.
 - Secure with clips.
 - Grease and install spools into the bypass.
 - Attach yoke to bypass.



- Grease bypass O-rings and press onto valve.
- Secure with clips.
- Before running the valve for the first time, flush out the water line and bypass.
 - 1. Be sure the bypass is closed.
 - 2. Turn the water source on at the inlet to the house.
 - 3. Disconnect the bypass from the valve.
 - 4. Put a container under the bypass and open the bypass to remove any foreign material out of the water lines.
 - 5. Close the bypass.
 - 6. Re-connect the bypass to the valve.
 - 7. Open the bypass slowly, to avoid water hammering.
 - 8. Let water flow into the pressure tank. When water flow stops, slowly open a cold water tap nearby and let water run until it runs clear and air is purged from the unit. Then close tap.
 - 9. Check for and repair any leaks.
 - 10. Start-up procedures are shown on the following pages for each different valve type. Locate your valve type and follow the start-up procedures listed.



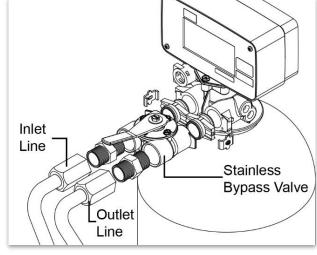


 $^{^{1}}$ BLFC (Brine Line Flow Control), refill rate for filling brine tank.

²DLFC (Drain Line Flow Control), backwash and rapid rinse flow rates.

Plumbing Connections

- As figure shows,
 - 1. Connect inlet pipe with inlet connector of bypass.
 - 2. Connect outlet pipe with outlet connector of bypass.

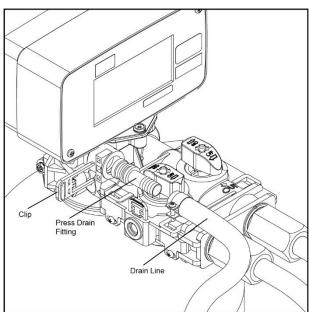


Drain Line Installation

- > As figure shows,
 - 1. Install drain line with an air gap to the floor drain. Valve drain hose not supplied.

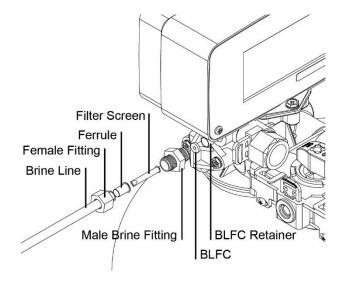


An air gap is required between the drain line and the drain (sewer). This avoids a syphon effect and reverse contamination.



Brine Line Installation

- As figure shows,
 - 1. Slide brine nut onto the 3/8" brine tubing.
 - 2. Install the filter screen into the ferrule and insert the ferrule into the end of brine tube.
 - 3. Insert tube into brine connector and secure brine nut to the brine connector.



Brine Tank Installation

- 1. Remove cap from brine well. Remove overflow nut and float from the well.
- 2. Adjust the float to the desired salt line. Use a twist and pull action to slide upper rubber stopper to desired position.

Note: Hold float rod securely to not pull from air check assembly. Repeat with lower rubber stopper to secure float in position.

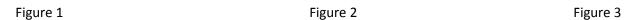
Refer to Figure 3

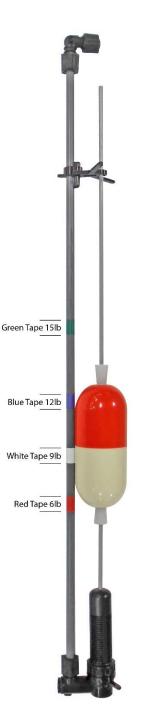
- 9x48 to white tape or above
- 10x44 to blue tape or above
- 10x54 to blue tape or above
- 12x52 to green tape or above
- 3. Secure brine well to brine tank with the overflow elbow and nut using the lower hole. Refer to Figure 1
- 4. Replace brine float into brine well.
- 5. Insert brine line tubing through the upper hole of tank and well. Refer to Figure 2
- 6. Slide brine line nut onto brine line, insert line into well, and secure nut to well.
- 7. Replace brine well cap.
- 8. Attach a drain tube to the overflow elbow. Maintain an air gap between the tube and floor drain.
- 9. Place approximately 1" (25mm) of water above the grid plate. If a grid is not utilized, fill to the top of the air check in the brine well.

Note: Do not add salt to the brine tank at this time.

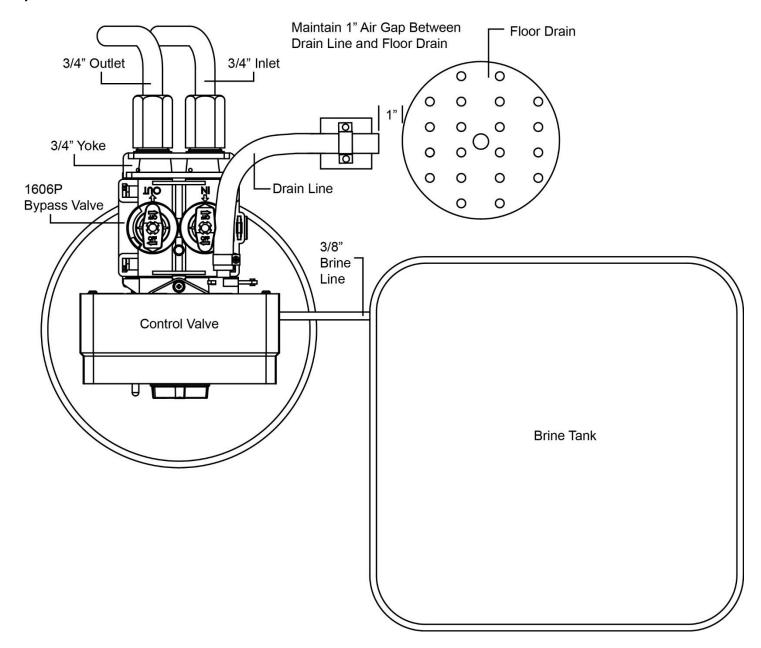






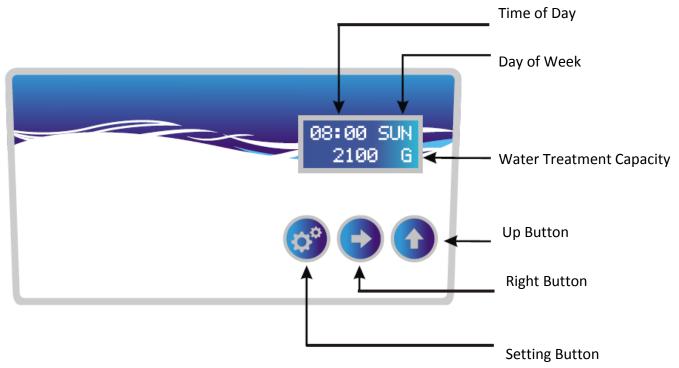


System Installation Chart



Programming

HD Standard Digital Meter Control Valve Programming, Installation, and Start-up Procedures



🚱 Setting Button

- 1. Press of for 5 seconds to enter Programming Mode.
- 2. When the valve is in Programming Mode, Press of to confirm the setting and enter into next menu.

Right Button

- 1. Press of for 5 seconds to start immediate manual regeneration.
- 2. Press 🔾 during a Regeneration Cycle to immediately advance the valve to the next cycle position.
- 3. When the valve is in Programming Mode, press to move the cursor.

🚺 Up Button

- 1. Press of for 5 seconds to display existing configured parameters.
- 2. When the valve is in Programming Mode, press 🕥 to adjust settings.

HD Standard Digital Meter Control Valve Factory Default Settings

Parameter	Unit	Default
Control Type		Meter Delayed
Time of Day	24 Hour Clock	08:00am
Day of Week		Sunday
Days Override	Days	30
Time of Regeneration	24 Hour Clock	2:00
Unit Mode	Gallons/Liters	Gallons
Feed Water Hardness	Grains	10
Number of People		4
Reference Setting	On or Off	On
Water Treatment Capacity	Grains	32,000 grains
Backwash Time	Minutes	10
Brine Draw Time	Minutes	60
Rapid Rinse Time	Minutes	10
Water Refill Time	Minutes	12

To reset valve to factory settings valve must be unplugged. Press and hold while plugging valve back in. The valve is now restored to factory settings.

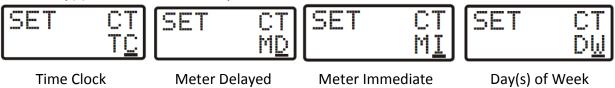
Programming the Control Valve

1. Time of Day/Day of Week

Press and hold (setting button) for 5 seconds to enter the Programming Mode. Set the Time of Day and Day of Week. Use the to adjust the hour. Press to move to the minute, adjust using the . Press to move to the day and adjust using the . Press to accept and advance to next screen.

2. Control Type

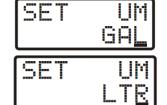
Use the to select Control Type. TC-Time Clock, MD-Meter Delayed, MI-Meter Immediate, or DW-Day(s) of Week. Meter Delayed is set as the default.



Press on to accept and advance to next screen.

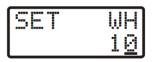
3. Unit Mode - Gallon or Liter

Gallon is set as the default. If you want to change to Liter, press ①. Press ② to accept and advance to next screen.



4. Feed Water Hardness

10 grains hardness is set as the default. To change the Hardness, press ountil desired hardness is reached. The hardness range is 1-50 grains.



Press of to accept and advance to next screen.

Note: To convert ppm hardness to grains hardness divide by 17.1; this will give you water hardness in grains.

5. Number of People

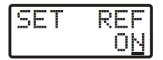
4 people is set as the default. To change the number of people, press ountil correct number of people in home is reached. People range is 1-10 people.



Press of to accept and advance to next screen.

6. Reference - On or Off

Reference On will calculate the capacity automatically based on system size. Reference Off allows you to set the capacity manually. Default is set as Reference On. To change the Reference, press ①.

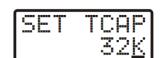


Press of to accept and advance to next screen.

Note: Reference settings change to the correct cycle times, however, the BLFC, DLFC, throat and nozzles will need to be changed for the systems larger than 32,000. Refer to the sizing chart on page 6.

7. Water Treatment Capacity (Reference On)

Reference On Capacity default is set at 32K. To change the system capacity, press on until desired capacity is reached.



32,000 grains (32K), 40,000 grains (40K), 48,000 grains (48K), 64,000 grains (64K)

Press (3) to accept and advance to next screen.

Reference	Backwash (BW)	Brine Slow Rinse (BSR)	Fast Rinse (FR)	Brine Refill (BR)
32K	10 minutes	60 minutes	10 minutes	12 minutes
40K	10 minutes	60 minutes	10 minutes	14 minutes
48K	10 minutes	60 minutes	10 minutes	8 minutes
64K	10 minutes	60 minutes	10 minutes	10 minutes

8. Water Treatment Capacity (Reference Off)

User-Defined Capacity default is set at 32,000. Turning the reference off allows you to manually adjust the system capacity. Press 10 until desired capacity is reached. Range 8,000-99,999 grains.

SET TCAP <u>3</u>2000

Press of to accept and advance to next screen. You will now be able to manually adjust each cycle time.



9. Day Override

Day Override default is set at 30 days. To change the number of days, press Juntil the desired number of days is reached. Range is 1-99 days/OFF Press to accept and advance to next screen.

10. Day of Week to Regenerate

Used only when DW-Day(s) of Week Control Type is selected. There are 7 days. Use the 10 to select day and the 20 to move to the next day. Repeat until the desired schedule is reached.

Press of to accept and advance to next screen.



SET RT 02:0<u>0</u>

11. Regeneration Time

Default is set for 2:00am (24 hour clock). To change the time of regeneration, press 1 until the desired time of regeneration is reached.

Press of to accept and advance to next screen.

12. Regeneration Cycle Times

Note: The cycle times are adjustable only when the reference setting has been turned off. When the reference setting is on, the times are automatically set for you. Defaults:



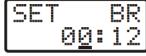
Backwash-10 min



Brine Slow Rinse-1hour



Fast Rinse-10 min



Brine Refill-12 mir

HD-FTC Reference Chart

Sand Filter	Sediment Turbidity			Mild			Average				Extreme						
Activated Carbon Filters	Taste and Odor		Mild Average							Extreme							
	PPM Ironx1																
Iron Filters	PPM Manganesex1	.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8
	PPM Sulfurx1																
	No. Of People				Cal	endar C	lock Re	genera	tion Fr	equenc	y – Nur	nber Of	Tab Pu	ılls			
	2	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3
	3	1	1	2	2	3	3	3	3	3	3	4	4	4	4	4	4
	4	1	2	2	2	3	3	3	4	4	4	6	6	6	6	6	6
	5	2	2	3	3	4	4	4	4	6	6	6	6	12	12	12	12
	6	2	2	3	3	4	4	4	6	6	12	12	12	12	12	12	12
	7	2	3	3	4	4	6	6	6	12	12	12	12	12	12	12	12
	8	2	3	3	4	6	6	6	6	12	12	12	12	12	12	12	12
	9	3	3	4	4	6	6	12	12	12	12	12	12	12	12	12	12
	10	3	4	4	6	6	12	12	12	12	12	12	12	12	12	12	12

Filter Timer Regeneration Reference Chart

Capacity Reference Chart

				Haro	lness PPM (G	PG)								Hardi	ness PPM (GF	PG)		
Capaci	ty 18,000	85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)		Capacity 3	36,000	85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)
	1	2,100	1,725	1,125	825	525	375	285			1	2,100	2,100	2,100	1,725	1,125	825	645
	2	2,100	1,650	1,050	750	450	300	210			2	2,100	2,100	2,100	1,650	1,050	750	570
No. of	3	2,100	1,575	975	675	375	225	135		No. of	3	2,100	2,100	2,100	1,575	975	675	495
People	4	2,100	1,500	900	600	300	150	60		People	4	2,100	2,100	2,100	1,500	900	600	420
	5	2,100	1,425	825	525	225	75	0			5	2,100	2,100	2,025	1,425	825	525	345
	6	2,100	1,350	750	450	150	0	0		-	6	2,100	2,100	1,950	1,350	750	450	270
Capaci	ty 24,000			Hard	lness PPM (G	PG)				Capacity 4	40.000			Hardı	ness PPM (GF	PG)		
capaci	.,,000	85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)		capacity	.0,000	85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)
	1	2,100	2,100	1,525	1,125	725	525	405			1	2,100	2,100	1,925	1,425	925	675	525
	2	2,100	2,100	1,450	1,050	650	450	330			2	2,100	2,100	1,850	1,350	850	600	450
No. of	3	2,100	2,100	1,375	975	575	375	255		No. of	3	2,100	2,100	1,775	1,275	775	525	375
People	4	2,100	2,100	1,300	900	500	300	180		People	4	2,100	2,100	1,700	1,200	700	450	300
	5	2,100	2,025	1,225	825	425	225	105			5	2,100	2,100	1,625	1,125	625	375	225
	6	2,100	1,950	1,150	750	350	150	30			6	2,100	2,100	1,550	1,050	550	300	150
Canadi	Capacity 30,000		Hardness PPM (GPG)							Capacity 4	10 000			Hardi	ness PPM (GF	PG)		
Сарасі	ty 30,000	85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)		Capacity -	+0,000	85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)
	1	2,100	2,100	1,925	1,425	925	675	525			1	2,100	2,100	2,100	1,725	1,425	825	625
	2	2,100	2,100	1,850	1,350	850	600	450			2	2,100	2,100	2,100	1,650	1,050	750	550
No. of	3	2,100	2,100	1,775	1,275	775	525	375		No. of	3	2,100	2,100	2,100	1,575	975	675	475
People	4	2,100	2,100	1,700	1,200	700	450	300		People	4	2,100	2,100	2,100	1,500	900	600	400
	5	2,100	2,100	1,625	1,125	625	375	225			5	2,100	2,100	2,025	1,425	825	525	325
	6	2,100	2,100	1,550	1,050	550	300	150			6	2,100	2,100	1,950	1,350	750	450	250
						120)				1					DD14/05	20)		
Capaci	ty 32,000		T		Iness PPM (G					Capacity (64,000				ness PPM (GF			
		85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)			_	85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)
	1	2,100	2,100	1,525	1,125	725	525	400			1	2,100	2,100	2,100	2,100	1,525	1,125	875
	2	2,100	2,100	1,400	1.050	650	450	325			2	2,100	2,100	2,100	2,100	1,450	1,050	800
No. of	3	2,100	2,100	1,375	975	575	375	250		No. of	3	2,100	2,100	2,100	2,100	1,375	975	725
People	4	2,100	2,100	1,300	900	500	300	175		People	4	2,100	2,100	2,100	2,100	1,300	900	650
	5	2,100	2,025	1,225	825	425	225	100			5	2,100	2,100	2,100	2,025	1,225	825	575
	6	2,100	1,950	1,150	750	350	150	25			6	2,100	2,100	2,100	1,950	1,150	750	500

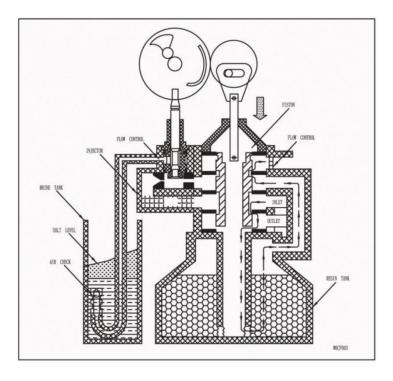
Sanitizing Procedure

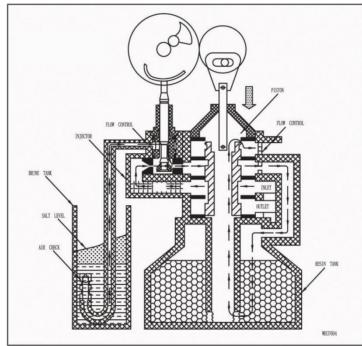
Sanitizing Procedure

At the start up or after a period of one week the following procedure is recommended to remove the possibility of bacterial growth or contamination within the system. This procedure relates only to the original description of equipment and options described for this system. Any alterations to the configuration would require evaluation by a trained water professional.

- Remove the brine tank cover and locate the brine well.
- Remove the brine well cap.
- Pour 1/3 cup of unscented bleach into the brine well.
- Place cap back on brine well and cover back on brine tank.
- The system must now be regenerated. At the control valve turn the knob clockwise until the indicator shows Regen. Allow approximately 2 hours for the valve to complete its regeneration cycle and to return to service mode.

Water Flow Diagram





Backwash Rinse Mode

Hard water enters unit through the valve inlet, flows through piston, down center tube, through the distributor at the bottom, then up through the media and out the drain line.

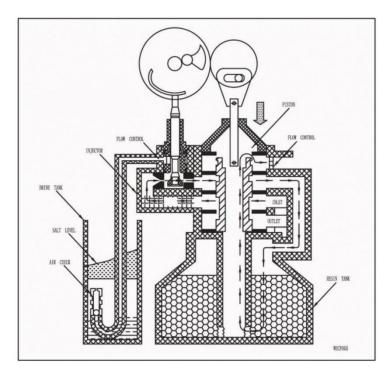
This is opposite of normal flow to flush suspended deposits out of the resin tank. A secondary purpose is to loosen the resin bed which will become compacted during service.

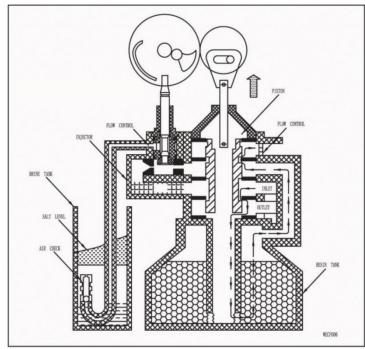
Brine Rinse Mode (Softeners Only)

Hard water enters the unit through the valve inlet. It then flows up into injector housing and down the nozzle and throat to draw brine from the brine tank.

Brine flows down through the media into the distributor at the bottom and out the drain line. This cleans the resin bed of deposits by releasing the charge held by them to attract the mineral and iron deposits naturally found in the water source.

Water Flow Diagram Continued





Slow Rinse Mode (Softeners Only)

Once the brine has been drawn out from the brine tank hard water continues to enter through the inlet valve.

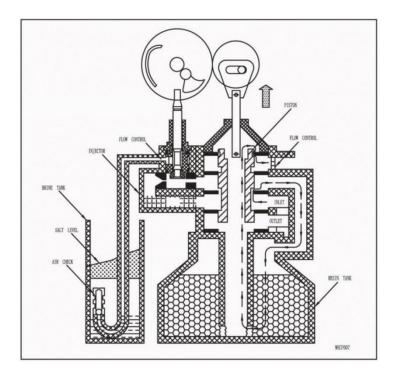
It then flows around the lower piston groove, through the nozzle and throat, down through media. It then enters the distributor and travels through the center hole in the piston and out to the drain line.

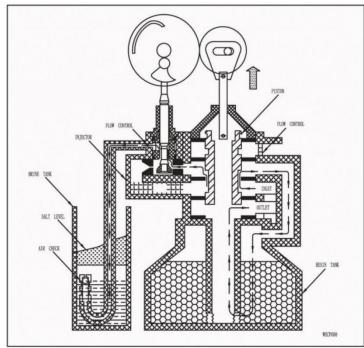
Rapid Rinse Mode (Second Backwash)

The media is rinsed to remove excess brine from the tank so the resin beads are once again ready to produce soft water.

Hard water enters the unit through the inlet valve, then flows through the piston, down center tube, through bottom distributor, up through the media, then around the piston and out the drain line.

Water Flow Diagram Continued





Settling Rinse Mode

Slow rinse of the resin bed. Water flows down through the resin bed up the bottom distributor and out the drain.

Brine Tank Refill Mode (Softeners Only)

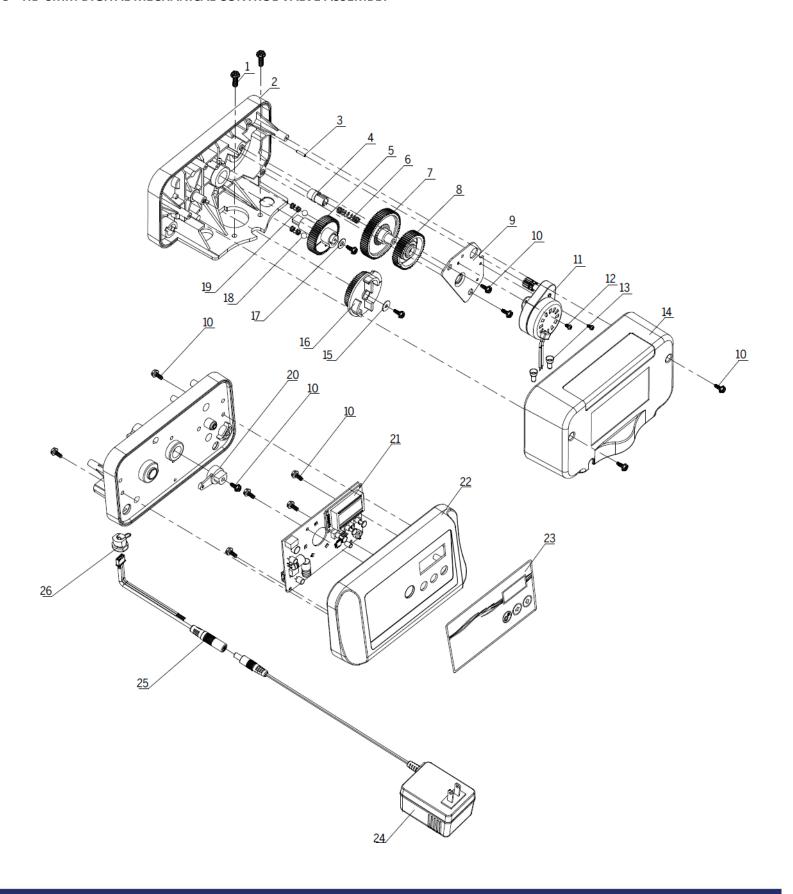
Hard water enters unit through the inlet valve, then flows up through the injector housing, and through the brine valve to refill the brine tank.

The system is now delivering soft water to the home. The brine tank fills with untreated water in preparation for the next regeneration cycle.

NOTE: When the valve is in Regeneration, raw water is being passed to service until rapid rinse is complete.

HD-SMM Valve Assembly

HD-SMM DIGITAL MECHANICAL CONTROL VALVE ASSEMBLY

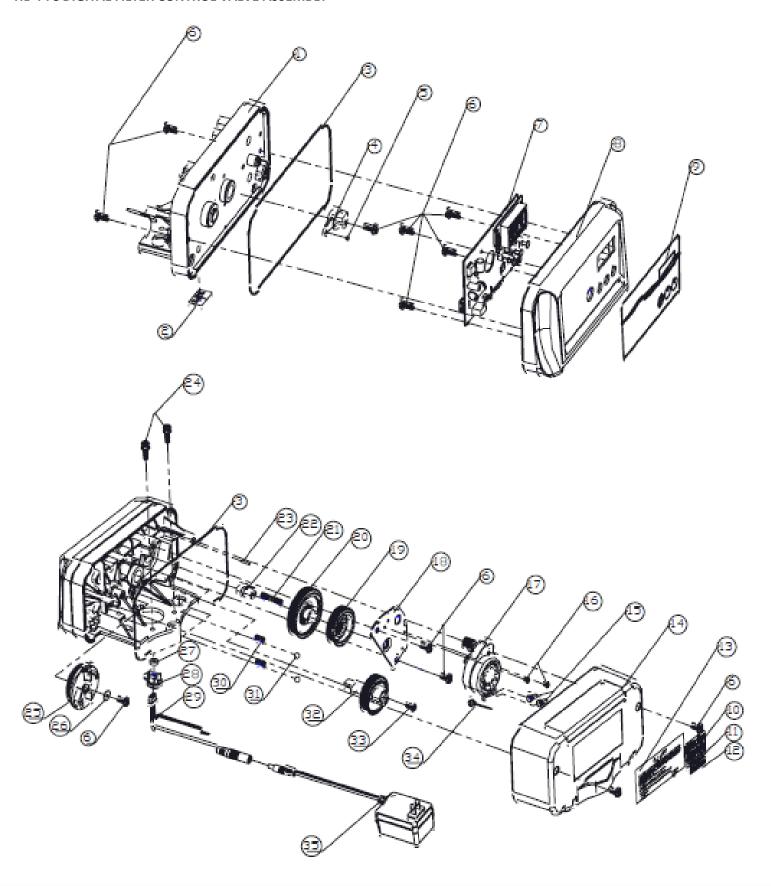


HD-SMM Valve Parts List

	HD-SMM Digit	tal Mechanical	Control	Valve Asse	mbly Parts List	
Item No.	Description	Quantity		Item No.	Description	Quantity
1	Screw	2		14	Back Cover	1
2	Bracket	1		15	Gasket	1
3	Pin	1		16	Brine Cam	1
4	Pinion	1		17	Gasket	1
5	Main Drive Gear & Shaft	1		18	Ball	2
6	Spring	1		19	Spring	2
7	Idler Gear	1		20	Cycle Actuator Arm	1
8	Drive Gear	1		21	Circuit Board Assembly	1
9	Motor Mounting Plate	1		22	Front Cover	1
10	Screw	13		23	Panel Label	1
11	Motor	1		24	Transformer	1
12	Screw	2		25	Connector Assembly	1
13	Wire Connector	2		26	Strain Relief	1

HD-FTC Valve Assembly

■ HD-FTC DIGITAL FILTER CONTROL VALVE ASSEMBLY

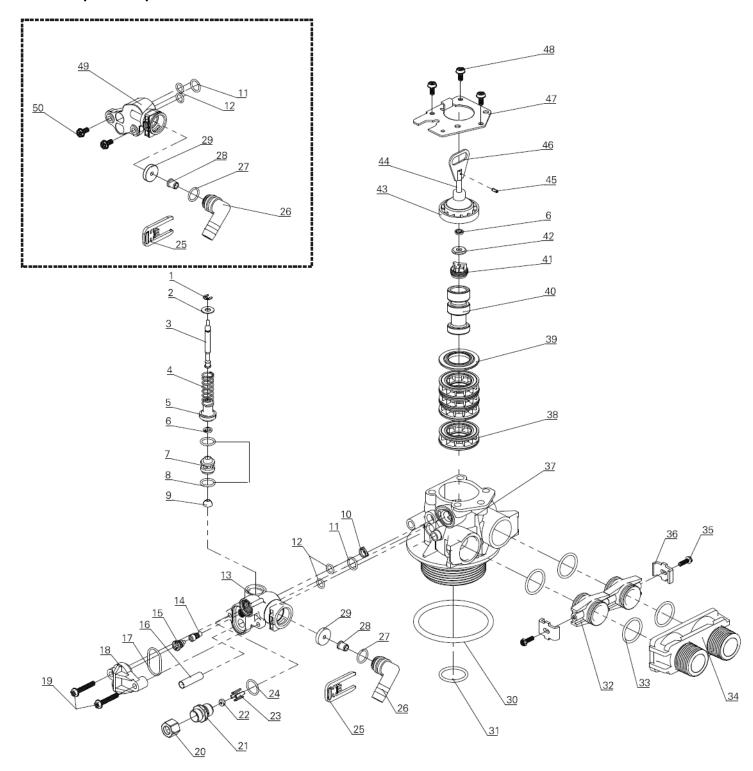


HD-FTC Valve Parts List

	HD-FTC	Digital Filter Conti	rol Valve Assemb	ly Parts List	
Item No.	Description	Quantity	Item No.	Description	Quantity
1	Digital Bracket Frame	1	19	Gear, Passive	1
2	Label, Tested	1	20	Gear, Main Driving	1
3	Seal	2	21	Spring, Button	1
4	Indicator	1	22	Button, White	1
5	Magnet, Meter	1	23	Pin, Motor	1
6	Screws	12	24	Screws, Front Cover	2
7	PCB, HD	1	25	Gear, Brine Piston	1
8	Cover, Front	1	26	Washer	1
9	Label, Front	1	27	Clip Pad	1
10	Label, Flow	1	28	Cord Clip	1
11	Label, Logo	1	29	Power Cable	1
12	Label, Serial #	1	30	Spring, Main Piston Gear	2
13	Label, Back	1	31	Ball	2
14	Cover, Back	1	32	Gear, Main Piston	1
15	Wire Connectors	2	33	Screw, Main Piston Gear	1
16	Screws, Motor	2	34	Zip Tie	1
17	Motor	1	35	Power Adaptor	1
18	Motor Mount Plate	1			

HD Valve Body Assembly

■ HD Valve Body Assembly



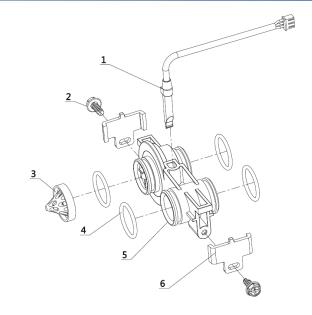
HD Valve Body Parts List

HD Valve Body Parts List						
Item No.	Description	Quantity		Item No.	Description	Quantity
1	Retainer Ring	1		26	Drain Elbow Barb	1
2	Washer	1	•	27	O-Ring	1
3	Brine Valve Stem	1		28	Bushing	1
4	Spring	1		29	DLFC Button	1
5	Brine Valve Cap	1		30	O-Ring	1
6	O-Ring	2		31	O-Ring	1
7	Brine Valve Spacer	1		32	Adaptor Coupling	2
8	O-Ring	2		33	O-Ring	4
9	Brine Valve Seat	1		34	Yoke	1
10	Air Disperser	1		35	Screw	2
11	O-Ring	1		36	Clip	1
12	O-Ring	2		37	Valve Body	1
13	Softener Injector Body	1		38	Spacer	4
14	Injector Throat	1		39	Seal	5
15	Injector Nozzle	1		40	Piston	1
16	Injector Filter Screen	1		41	Piston Retainer	1
17	O-Ring	1		42	O-Ring Retainer	1
18	Injector Cover	1		43	End Plug	1
19	Screw	2		44	Piston Rod	1
20	Fitting Nut	1		45	Pin	1
21	BLFC Fitting	1		46	Drive Link	1
22	BLFC Button	1		47	End Plug Retainer	1
23	BLFC Button Retainer	1		48	Screw	3
24	O-Ring	1	1	49	Filter Injector Body	1
25	Retainer Latch	1		50	Screw	2

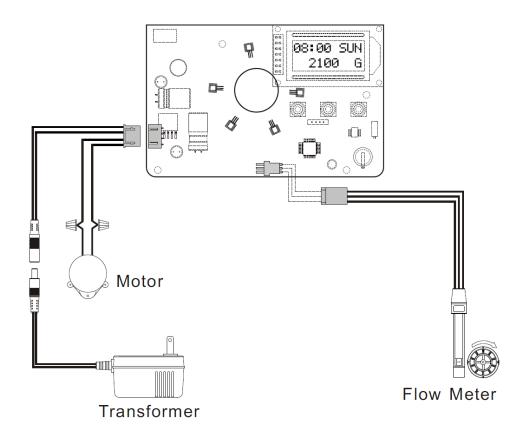
HD Flow Meter Assembly & Wiring Diagram

HD - Flow Meter Assembly

Item No.	Description	Quantity
1	Harness Assembly	1
2	Screw	2
3	Flow Straightener	1
4	O-Ring	4
5	Meter Body Assembly	1
6	Clip	2



HD Wiring Diagram

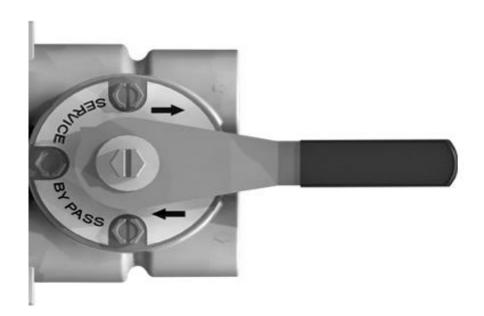


Bypass Assembly

Plastic Bypass (yoke required with bypass, available in ¾" & 1")

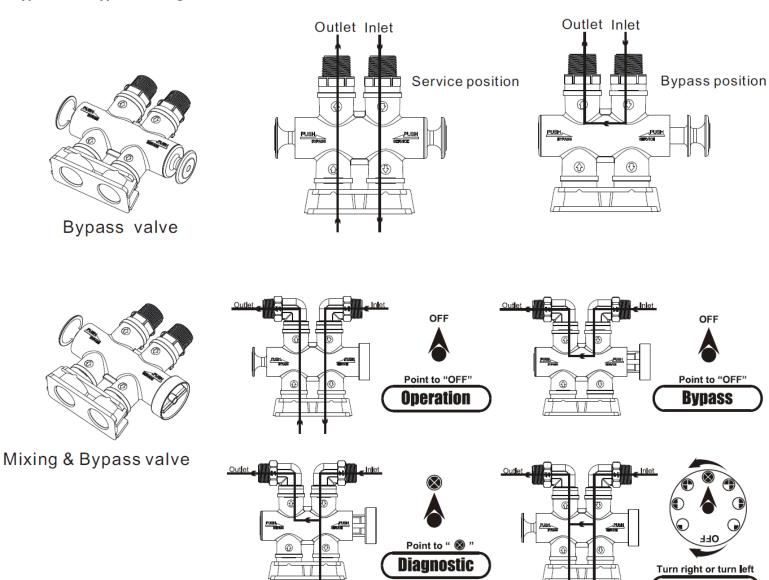


• Stainless Bypass (available in ¾" & 1")



Bypass Assembly Continued

Bypass and Bypass Mixing Valve



FLOW RATE	≥ 16	≥8	≥ 4	≥ 2.6	≥ 1.3	≥ .5
POSITION	GPM	GPM	GPM	GPM	GPM	GPM
\otimes	29%	31%	35%	39%	47%	65%
	23%	26%	29%	31%	40%	57%
	16%	17%	19%	22%	29%	42%
•	9%	11%	12%	14%	18%	32%

Service Instructions

Replace Brine Valve, Injectors, and Screen

- 1. Unplug electrical cord from outlet.
- 2. Turn off water supply to system.
- 3. Relieve water pressure in the valve by advancing it to *Backwash* position momentarily. Return the valve to the *In Service* position.
- 4. Disconnect brine tube and drain line connections at the injector body.
- 5. Remove the two injector body mounting screws. The injector and brine module can now be removed from the control valve. Remove and discard valve body O-Rings.
- 6. Replace brine valve.
 - a. Pull brine valve from injector body, also remove and discard O-Ring at bottom of brine valve hole.
 - b. Apply silicone lubricant to new O-Ring and reinstall at bottom of brine valve hole.
 - c. Apply silicone lubricant to O-Ring on new valve assembly and press into brine valve hole. The shoulder on bushing should be flush with the injector body.
- 7. Replace injectors and screen.
 - a. Remove injector cap and screen, discard O-Ring. Unscrew injector nozzle and throat from injector body.
 - b. Screw in new injector throat and nozzle, be sure they are seated tightly. Install a new screen.
 - c. Apply silicone lubricant to new O-Ring and install around oval extension on injector cap.
- 8. Apply silicone lubricant to three new O-Rings and install over three bosses on injector body.
- 9. Insert screws with washers through injector cap and injector. Place this assembly through hole in timer housing and into mating holes in the valve body. Tighten screws.
- 10. Reconnect brine tube and drain line.
- 11. Return bypass to *In Service* position. Water pressure automatically builds in the system.

Note: Be sure to shut off any bypass line.

- 12. Check for leaks at all seal areas. Check drain seal with the valve in the Backwash position.
- 13. Plug electrical cord into outlet.
- 14. Set time of day. Be sure to return the control valve to the In Service position.
- 15. Make sure there is enough brine in the brine tank.
- 16. Rotate program wheel counterclockwise until it stops at regeneration position.
- 17. Start regeneration cycle manually if water is hard.

Replace Timer

- 1. Unplug electrical cord from outlet.
- 2. Turn off water supply to system.
- 3. Relieve water pressure in the system by putting the valve in the Backwash position momentarily. Return the valve to the In Service position.
- 4. Pull cable out of meter cover. Remove the valve back cover.
- 5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly now lifts off easily.
- 6. Put new timer on top of valve. Be sure drive pin on main gear engages slot in drive yoke (rotate control know if necessary).
- 7. Replace timer mounting screws. Replace screw and washer at drive yoke.
- 8. Return bypass to normal In Service position. Water pressure automatically builds in the system. **Note:** Be sure to shut off any bypass line.
- 9. Plug electrical cord into outlet.
- 10. Set time of day. Be sure to return the control valve to the In Service position.
- 11. Replace the control valve back cover. Be sure grommet at cable hole is in place.
- 12. Make sure there is enough brine in the brine tank.
- 13. Rotate program wheel counterclockwise until it stops at Regeneration position.
- 14. Start regeneration cycle manually if water is hard.
- 15. Plug cable into meter cover. Rotate cable to align drive flat if necessary.

Replace Piston Assembly

- 1. Unplug electrical cord from outlet.
- 2. Turn off water supply to system.
- 3. Relieve water pressure in the system by putting the valve in the Backwash position momentarily. Return the valve to the In Service position.
- 4. Pull cable out of meter cover. Remove the valve back cover.
- 5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly now lifts off easily. Remove end plug retainer plate.
- 6. Pull upward on end of piston yoke until assembly is out of valve.
- 7. Inspect the inside of the valve to make sure that all spacers and seals are in place, and that there is no foreign matter that would interfere with the valve operation.
- 8. Take new piston assembly as furnished and push piston into valve by means of the end plug. Twist yoke carefully in a clockwise direction to properly align it with drive gear. Replace end plug retainer plate.
- 9. Place timer on top of valve. Be sure drive pin on main gear engages slot in drive yoke (rotate control knob if necessary).
- 10. Replace timer mounting screws. Replace screw and washer at drive yoke.
- 11. Return bypass to normal In Service position. Water pressure automatically builds in the system.

Note: Be sure to shut off any bypass line.

- 12. Plug electrical cord into outlet.
- 13. Set time of day. Be sure to return the control valve to the In Service position.
- 14. Replace the control valve back cover. Be sure grommet at cable hole is in place.
- 15. Make sure there is enough brine in the brine tank.
- 16. Rotate program wheel counterclockwise until it stops at Regeneration position.
- 17. Start regeneration cycle manually if water is hard.
- 18. Plug cable into meter cover. Rotate cable to align drive flat if necessary.

Replace Seals and Spacers

- 1. Unplug electrical cord from outlet.
- 2. Turn off water supply to system.
- 3. Relieve water pressure in the system by putting the valve in the Backwash position momentarily. Return the valve to the In Service position.
- 4. Pull cable out of meter cover. Remove the valve back cover.
- 5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly now lifts off easily. Remove end plug retainer plate.
- 6. Pull upward on end of piston rod yoke until assembly is out of valve. Remove and replace seals and spacers with fingers.
- 7. Place timer on top of valve. Be sure drive pin on main gear engages slot in drive yoke (rotate control knob if necessary).
- 8. Replace timer mounting screws. Replace screw and washer at drive yoke.
- 9. Return bypass to normal In Service position. Water pressure automatically builds in the system. **Note:** Be sure to shut off any bypass line.
- 10. Plug electrical cord into outlet.
- 11. Set time of day. Be sure to return the control valve to the In Service position.
- 12. Replace the control valve back cover. Be sure grommet at cable hole is in place.
- 13. Make sure there is enough brine in the brine tank.
- 14. Rotate program wheel counterclockwise until it stops at Regeneration position.
- 15. Start regeneration cycle manually if water is hard.
- 16. Plug cable into meter cover. Rotate cable to align drive flat if necessary.

Replace Meter

- 1. Unplug electrical cord from outlet.
- 2. Turn off water supply to system.
- 3. Relieve water pressure in the system by putting the valve in the Backwash position momentarily. Return the valve to the In Service position.
- 4. Pull cable out of meter cover.
- 5. Remove two screws and clips at bypass valve or yoke. Pull resin tank away from plumbing connections.
- 6. Remove two screws and clips at control valve. Pull meter module out of control valve.
- 7. Apply silicone lubricant to four new O-rings and assemble to four ports on new meter module.
- 8. Assemble meter to control valve. *Note:* Meter portion of module must be assembled at valve outlet.
- 9. Attach two clips and screws at control valve. Be sure clip legs are firmly engaged with lugs.
- 10. Push resin tank back to the plumbing connections and engage meter ports with bypass valve or yoke.
- 11. Attach two clips and screws at bypass valve or yoke. Be sure clip legs are firmly engaged with lugs.
- 12. Return bypass to normal In Service position. Water pressure automatically builds in the system. **Note:** Be sure to shut off any bypass line.
- 13. Check for leaks at all seal areas.
- 14. Plug electrical cord into outlet.
- 15. Set time of day. Be sure to return the control valve to the In Service position.
- 16. Replace the control valve back cover. Be sure grommet at cable hole is in place.
- 17. Make sure there is enough brine in the brine tank.
- 18. Rotate program wheel counterclockwise until it stops at Regeneration position.
- 19. Start regeneration cycle manually if water is hard.
- 20. Plug cable into meter cover. Rotate cable to align drive flat if necessary.

Replace Meter Cover and/or Impeller

- 1. Unplug electrical cord from outlet.
- 2. Turn off water supply to system.
- 3. Relieve water pressure in the system by putting the valve in the Backwash position momentarily. Return the valve to the In Service position.
- 4. Pull cable out of meter cover.
- 5. Remove four screws on cover. Lift cover off of meter module, discard O-ring.
- 6. Remove and inspect impeller for gear or spindle damage, replace if necessary.
- 7. Apply silicone lubricant to new O-ring and assemble to the smallest diameter on meter cover.
- 8. Assemble cover to meter module. Be sure impeller spindle enters freely into cover. Press firmly on cover and rotate if necessary to assist in assembly. Replace four screws and tighten.
- 9. Return bypass to normal In Service position. Water pressure automatically builds in the system. **Note:** Be sure to shut off any bypass line.
- 10. Check for leaks at all seal areas.
- 11. Plug electrical cord into outlet.
- 12. Set time of day. Be sure to return the control valve to the In Service position.
- 13. Rotate program wheel counterclockwise until it stops at Regeneration position.
- 14. Start regeneration cycle manually if water is hard.
- 15. Plug cable into meter cover. Rotate cable to align drive flat if necessary.

Softener Troubleshooting

Problem	Cause	Correction		
Softener Fails to Regenerate	 A. Electrical service to unit has been interrupted. B. Timer is not operating properly. C. Defective valve drive motor. D. Timer programmed incorrectly. 	 A. Assure permanent electrical service, check fuse, plug, switch, etc. B. Replace timer. C. Replace drive motor. D. Check programming and reset as 		
2. Softener Delivers Hard Water	 A. Bypass valve is open. B. No salt in brine tank. C. Injectors or screen plugged. D. Insufficient water flowing into brine tank. E. Hot water tank hardness. F. Leak at distributor tube. G. Internal valve leak. H. Flow meter jammed. I. Flow meter cable disconnected or not plugged into meter. J. Programmed incorrectly. 	 needed. A. Close bypass valve. B. Add salt to brine tank and maintain salt level above water level. C. Replace injectors and screens. D. Check brine tank fill time and clean brine line flow control if plugged. E. Drain the hot water tank. F. Make sure distributor tube is not cracked. Check O-ring and tube pilot. G. Replace Seals and spacers and/or piston. H. Remove obstruction from flow meter. I. Check meter cable connection to timer and meter. J. Reprogram the control to the proper regeneration type, inlet water hardness, capacity of flow meter size. 		
3. Unit uses too much salt.	A. Improper salt setting.B. Excessive water in brine tank.C. Programmed incorrectly.	A. Check salt usage and salt setting.B. See problem 7.C. Check programming and reset as needed.		
4. Loss of water pressure.	 A. Iron buildup in line to water conditioner. B. Iron buildup in water conditioner. C. Inlet of control plugged due to foreign material broken loose from pipes by recent work done on plumbing system. 	 A. Clean line to water conditioner. B. Clean control and add resin cleaner to resin bed. Increase frequency of regeneration. C. Remove piston and clean control. 		

Softener Troubleshooting Continued

Problem	Cause	Correction	
	E. Electrical service to unit has been interrupted.	E. Assure permanent electrical service, check fuse, plug, switch, etc.	
5. Softener Fails to Regenerate	F. Timer is not operating properly.	F. Replace timer.	
	G. Defective valve drive motor.	G. Replace drive motor.	
	H. Timer programmed incorrectly.	 H. Check programming and reset as needed. 	
	K. Bypass valve is open.	K. Close bypass valve.	
	L. No salt in brine tank.	L. Add salt to brine tank and maintain salt level above water level.	
	M. Injectors or screen plugged.	M. Replace injectors and screens.	
	N. Insufficient water flowing into brine tank.	N. Check brine tank fill time and clean brine line flow control if plugged.	
		O. Drain the hot water tank.	
	O. Hot water tank hardness.	P. Make sure distributor tube is not	
6. Softener Delivers Hard Water	P. Leak at distributor tube.	cracked. Check O-ring and tube pilot.	
		Q. Replace Seals and spacers and/or	
	Q. Internal valve leak.	piston.	
	D. Flavorestanians and	R. Remove obstruction from flow	
	R. Flow meter jammed.	meter. S. Check meter cable connection to	
	S. Flow meter cable disconnected or	timer and meter.	
	not plugged into meter.	T. Reprogram the control to the	
	T. Programmed incorrectly.	proper regeneration type, inlet	
		water hardness, capacity of flow meter size.	
	D. Improper salt setting.	D. Check salt usage and salt setting.	
7. Unit uses too much salt.	E. Excessive water in brine tank.	E. See problem 7.	
7. Oime ases too mach sait.	F. Programmed incorrectly.	F. Check programming and reset as needed.	
	D. Iron buildup in line to water conditioner.	D. Clean line to water conditioner.	
	E. Iron buildup in water conditioner.	E. Clean control and add resin	
9 Loss of water process	·	cleaner to resin bed. Increase	
8. Loss of water pressure.	F. Inlet of control plugged due to	frequency of regeneration.	
	foreign material broken loose from	F. Remove piston and clean control.	
	pipes by recent work done on		
	plumbing system.		

Softener Troubleshooting Continued

	A. Air in water system.	A. Assure that well system has proper air eliminator control check for dry
9. Loss of resin through drain line.	B. Drain line flow control is too large.	well condition. B. Ensure drain line flow control is sized correctly.
10. Iron in conditioned water.	A. Fouled resin bed.	A. Check backwash, brine draw and brine tank fill. Increase frequency of regeneration. Increase
To monimical water.	B. Iron content exceeds recommended parameters.	backwash time. B. Add iron removal filter or system.
11. Excessive water in brine tank.	A. Plugged drain line flow control.B. Brine valve failure.C. Improper programming.	A. Clean flow control.B. Replace brine valve.C. Check programming and reset as needed.
12. Salt water in service line.	 A. Plugged injector system. B. Timer not operating properly. C. Foreign material in brine valve. D. Foreign material in brine line flow 	 A. Clean injector and replace screen. B. Replace timer. C. Clean or replace brine valve. D. Clean brine line flow control.
12. July Water in Service inic.	control. E. Low water pressure. F. Improper programming.	E. Raise water pressure.F. Check programming and reset as needed.
12. Cofte non feile to dunin huine	A. Drain line flow control is plugged.B. Injector is plugged.C. Injector screen plugged.D. Line pressure is too low.	 A. Clean drain line flow control. B. Clean or replace injectors. C. Replace screen. D. Increase line pressure (line pressure must be at least 25 psi at
13. Softener fails to draw brine.	E. Internal control leak.	all times.) E. Change seals and spacers and/or piston assembly.
	F. Improper programming.G. Timer not operating properly.	F. Check programming and reset as needed.G. Replace timer.
14. Control cycles continuously.	G. Timer not operating properly.A. Time not operating properly.B. Faulty micro switches and or harness.	Replace timer. Replace faulty micro switch or harness.
	C. Faulty cycle cam operation.	C. Replace cycle cam or reinstall.
	A. Foreign material in control.B. Internal control leak.	A. Remove piston assembly, inspect and remove foreign material.B. Replace seals and/or piston assembly.
15. Drain flows continuously.	C. Control valve jammed in brine or backwash position.	C. Replace piston and seals and spacers.
	D. Timer motor stopped or jammed.	D. Replace timer motor, check for missing teeth on gears.
	E. Timer not operating properly.	E. Replace timer.

Filter Troubleshooting

Problem	Cause	Correction		
1. Filter fails to backwash	A. Electrical service to unit has been interrupted.B. Timer is defective.C. Power failure.	 A. Assure permanent electrical service (check fuse, plug, pull chain or switch). B. Replace timer. C. Reset time of day. 		
	A. Bypass valve is open.B. Excessive water usage.	 A. Close bypass valve. B. Increase days between regenerations (see timer instructions), make sure that there is not a leaking valve in the toilet or sinks. 		
2. Filter "bleeds" iron	C. Hot water tank rusty.D. Leak at distributor tube.	C. Flush out the hot water tank.D. Verify distributor tube is not cracked, check O-rings and tube pilot.		
	E. Fouled filter media bed.F. Inadequate backwash flow rate.	 E. Replace bed. F. Make sure filter has correct DLFC. Be sure flow control is not clogged or drain line restricted. Be sure water pressure has not dropped. 		
3. Loss of water pressure	A. Iron or turbidity build-up in water filter.	A. Reduce days between backwashing so filter backwashes more often, make sure filter is sized large enough to handle water usage.		
	B. Inlet plugged due to foreign material broken loose from pipes.	B. Remove piston and clean control.		
4. Loss of filter media through drain line	A. Broken or missing upper or lower basket.	A. Replace install or replace basket.		
5. Drain flows continuously	A. Foreign material in control.B. Internal control leak.	 A. Remove piston assembly and inspect bore, remove foreign material and check control in various cycle positions. B. Replace seals and/or piston 		
	C. Control valve jammed in rinse or backwash.	assembly. C. Replace piston, seals and spacers (and drive motor if necessary).		

Warranty





As described herein, Hankscraft Inc., d/b/a H20 Products ("Hankscraft"), warrants its products are free from defects in material and workmanship only, when properly installed, operated, and maintained. This warranty is subject to the exceptions herein.

Hankscraft warrants to the original owner that the items listed below, excluding but not limited to wear parts like O-rings, gaskets and seals, will be free from defects in materials and workmanship for the period of time specified below from the original purchase date.

- Control valves and all internal valve parts and the salt storage tank FIVE YEARS
- Mineral tank TEN YEARS
- Any other component ONE YEAR
- Ceramic disc for rotary valve (applicable to RevV series valves only) LIFETIME
- RO and UF Filter Systems- ONE YEAR

Media/resin is not warrantied due to water supply quality differences

Any parts used for replacement are warrantied for the remainder of the original warranty period applicable to the part from the date of manufacture so long as the parts are installed by a Hankscraft factory trained and authorized installer. Hankscraft's obligation by this Limited Warranty, at is option, is to repair or replace any warrantied product only. Labor for repair or replacement is not included as part of this warranty. Prior to returning the product to Hankscraft, a valid return materials authorization number must be obtained from Hankscraft. Any product returned to Hankscraft without a valid return authorization number will be rejected. Any product found to be defective will, at the sole discretion of Hankscraft, be repaired or replaced. Hankscraft is not responsible for shipping cost to the repair facility. This section lists the sole remedies for any valid warranty claim.

This warranty does not apply to defects reported to Hankscraft outside of the warranty period.

This warranty does not apply to defects caused by installing, operating, servicing, modifying, repairing or maintaining (or lack of maintaining) the product outside of Hankscraft's recommendations. Filters, membrane elements and flow restrictors that become fouled or plugged due to excessive turbidity, dissolved solids, or microorganisms are not covered by this warranty. This warranty does not apply to defects caused by damage during shipment, neglect, misuse, modification, accident, noncompliance with local codes and ordinances, hot water, frozen water, sediment, corrosive liquids, gases, chemicals, bacteria, animals, sand, salt, flood, wind, fire, outdoor installations where the product is not reasonably covered, pneumatic use, natural disasters, war, terrorism or acts of God. No other person is authorized to make any other warranty on behalf of Hankscraft either during or after the applicable warranty period.

Hankscraft assumes no liability for determining the proper products and equipment or installation necessary to meet the requirements of the user of the product, and Hankscraft does not authorize others to assume such liability on its behalf.

THE WARRANTIES AND REMEDIES HEREIN ARE EXCLUSIVE AND IN LIEU OF ANY AND ALL OTHER WARRANTIES OR REMEDIES EITHER EXPRESSED OR IMPLIED, HEREIN OR ELSEWHERE, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, NON-INFRINGEMENT OR WARRANTIES RESULTING FROM COURSE OF PERFORMANCE, COURSE OF DEALING OR FROM USAGE OF TRADE. HANKSCRAFT HEREBY DISCLAIMS ALL OTHER WARRANTIES. HANKSCRAFT'S LIABILITY SHALL NOT EXCEED THE COST OF THE PRODUCT. HANKSCRAFT IS NOT RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OR EXPENSES OF ANY KIND WHATSOEVER, INCLUDING LOSS OF PROFITS, UNDER ANY CIRCUMSTANCES AND REGARDLESS OF WHETHER HANKSCRAFT WAS AWARE OF THE POSSIBILITY OF ANY SUCH LOSS.



Contact Information

Thank you for choosing this Hankscraft H20 PRODUCTS water treatment system. Please contact us with questions.

Hankscraft H2O Products 300 Wengel Drive Reedsburg, WI 53959 (608)524-4341

Updated May 2015