

Performa™ Cv Twin Alternating and High Flow Systems

Manual Supplement

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1.0 Installation and Start-Up

Water Line Connection

A bypass valve system must be installed to accommodate occasions when the water conditioning system must be bypassed for supplying hard water or servicing. The most common bypass systems are the Autotrol Series 1265 bypass valve (Figure 1) and plumbed-in globe valves (Figure 2). Although both are similar in function, the Autotrol Series 1265 bypass offers simplicity and ease of operation.

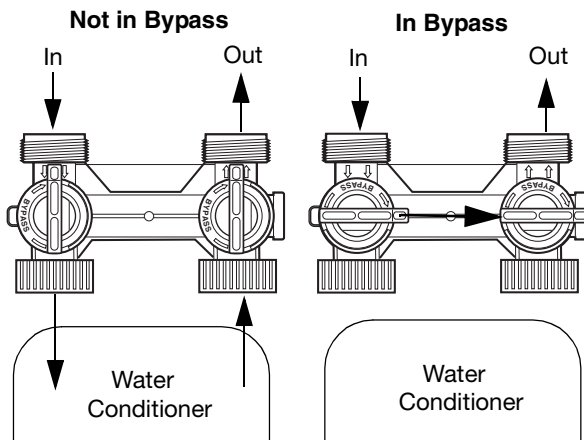


Figure 1 - Autotrol Series 1265 Bypass Valve

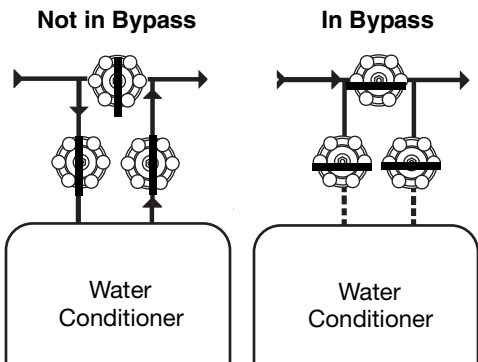


Figure 2 - Typical Globe Valve Bypass System

Brine Tank

Normally only one brine tank is needed. The use of block salt or rock salt is not recommended. If a brine shelf is used, two brine tanks are required. This is due to the increased time needed to produce a concentrated brine solution when using a salt shelf. If rapid multiple exhaustions and regenerations are anticipated, do not use a salt shelf even if two brine tanks are used.

Turbine Connection

Install the turbine assembly (Figure 3) on the outlet plumbing within 2.5 feet (76.3 cm) of the water conditioning valve so the turbine probe may reach the turbine. Observe the flow direction arrow on the turbine housing. It should be pointing in the same direction as the water flow in the piping.

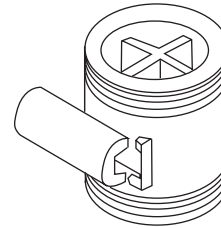


Figure 3 - Turbine

The turbine may be mounted in either the horizontal or vertical position. However, be sure that there is a full pipe condition at all times. The preferred orientation is either the upflow or horizontal direction (Figure 4). Do not mount the turbine in a vertical orientation with a downflow condition.

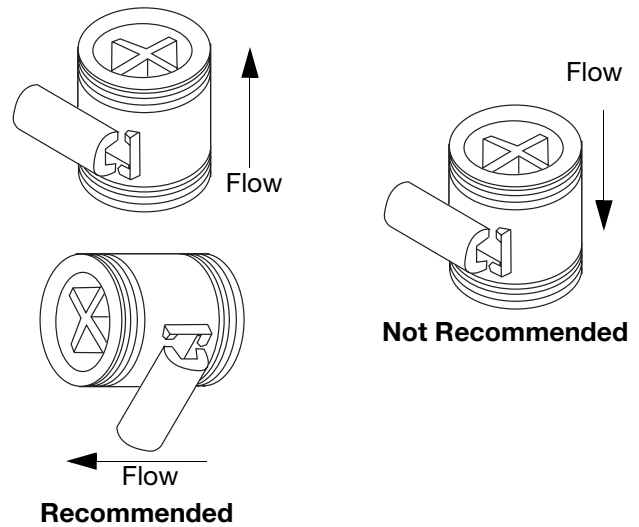


Figure 4 - Recommended Flow Direction

Do not overtighten the turbine housing adapter nuts or the threads may be damaged. The probe will “click” into place when inserted the proper depth into the housing receptacle.

Manifold Assembly Drawing

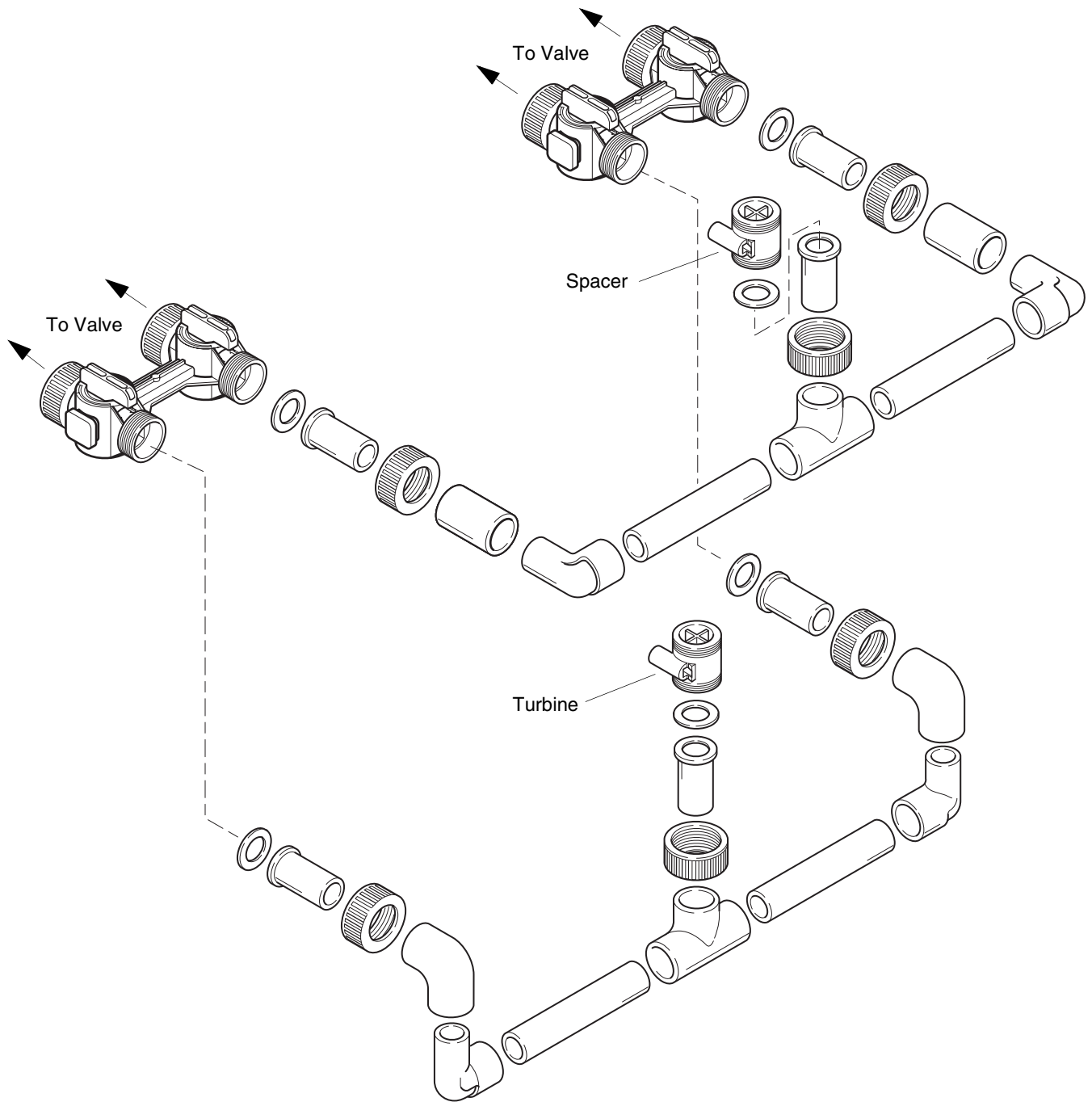


Figure 5 — A Typical Manifold Kit Assembly

Connection of Optional Interconnecting Manifold

The Performa Cv Twin System is available with or without an interconnecting manifold. If you are using the Autotrol interconnecting manifold, follow the instructions that are supplied with the kit. If you are using the system without the Autotrol interconnecting manifold, an example of an appropriate manifold connection is shown in Figure 6.

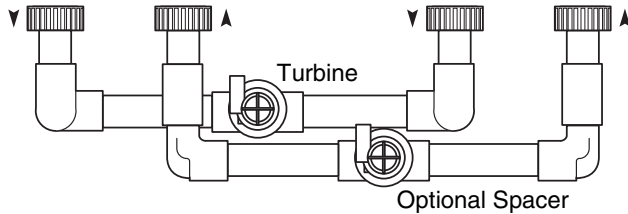


Figure 6 - Manifold Connection

Connecting the Control

The Capacity, Hardness, and Brine Draw values are set to 0 at the factory and must be changed to the appropriate values before the control will operate. "Err4" will be displayed until valid input is entered for each of these items. Using Tables 1 through 6, determine what these values should be before applying power to the control. When the conditioners are operational, complete the following steps to connect the Performa Cv Twin control.

1. Connect the control to the wall-transformer cable.
The power connection is located on the underside of the main control (tank 1) on the left side. Insert the barrel style connector into the power plug.
2. Plug the wall-transformer into an electrical outlet that is not controlled by a wall switch.
3. If the cord length of the transformer is too short, an optional 15-foot low voltage extension cord may be purchased (contact your original equipment dealer for details).

High Flow System

The standard manifold assembly is available for use in the High Flow system when the one-inch turbine is adequate to service the application. In applications where service or peak flow rates exceed the range of the one-inch turbine, a two-inch turbine assembly is required. When the two-inch turbine High Flow is ordered, a two-inch Autotrol turbine with 1-1/2-inch NPT or BSPT brass adapters is included. The manifold is the responsibility of the installer and not available from Osmonics.

2.0 Placing Conditioners into Operation

Initial Start-Up

After the water conditioning system is installed, the conditioners should be disinfected before they are used to treat potable water. Refer to the **Disinfection of Water Conditioners** section in the Performa Cv manual.

The following steps should be followed to place the system into operation. **The Performa Cv Twin System is shipped with a clip on #2 bypass flapper of each valve. After the start up is completed, remove the clip and save as a maintenance part.**

1. Remove the rear valve cover by pushing on the tabs located on the sides in the front of the cover and lift the cover off the control.
2. Rotate the #1 tank camshaft COUNTERCLOCKWISE (as viewed from the front of the control) until the indicator points directly to the **Backwash** position. Repeat with #2 tank camshaft.
3. With the bypass valves in the “service” position, very slowly open the inlet water supply to approximately 1/4 turn open position. This will prevent the media from lifting into the control valve.
4. When all of the air is purged from the tank (water begins to flow steadily from the drain), slowly open the main supply valve all the way. Allow the water to run into the drain until clear.
5. Add water to the brine tank(s) (initial fill). With a bucket or hose, add approximately 1 gallon (3 liters) of water to the brine tank, enough to cover the brine line pick up screen. **Note:** Salt shelves should not be used in systems with only 1 brine tank.
6. Carefully rotate the tank 1 camshaft, followed by the tank 2 camshaft, COUNTERCLOCKWISE until the indicator on the regeneration cycle indicator points directly to the center of the **Refill** position. Hold there until the air checks (Figure 6) fill with water and water flows through the brine line into the brine tank. Do not refill for more than two minutes.
7. Rotate the tank 1 camshaft to **Regeneration Complete/Treated Water** and the tank 2 camshaft to the **Brine/Slow Rinse** position and check that water is being drawn from the brine tank. The water level in the brine tank will recede slowly. Observe the water level for at least three minutes. If the water level does not recede, goes up, or air enters the transparent air check chamber and the ball falls and seats, refer to the **Troubleshooting** section in the Performa Cv manual.
8. Repeat step 7 checking brine draw of tank 1 by rotating the tank 1 camshaft to **Brine/Slow Rinse** and the tank 2 camshaft to **Regeneration Complete/Treated Water**.
9. When both tanks have been checked for brine draw, rotate both tank camshafts to the **Start-up** position indicated on the front of the twin control or the “II” of Refill on the High Flow Controls. Apply power to controls and proceed to “Programming the Performa Cv Control”. Follow instructions indicated in “Performa Cv Control Start-up” tables to complete system set up.

Important: Remove the bypass flapper clip after initial set up is complete.

Table 1 Performa Cv Twin Alternating Control Start-up

Task	Tank 1 Control Position	Tank 2 Control Position
Note: Do not power controls until Step 3.		
1. Manually rotate camshafts counterclockwise to startup positions indicated.	TANK 1 START UP POSITION (Slow Rinse)	TANK 2 START UP POSITION (Refill)
2. Connect the Tank 1 and Tank 2 controls with factory-installed 4-pin connector.	TANK 1 START UP POSITION (Slow Rinse)	TANK 2 START UP POSITION (Refill)
3. Connect the 12 VAC power supply to the Tank 1 control.	TANK 1 START UP POSITION (Slow Rinse)	TANK 2 START UP POSITION (Refill)
4. Program the control as indicated in the programming section.	TANK 1 START UP POSITION (Slow Rinse)	TANK 2 START UP POSITION (Refill)
5. Exit the Programming Mode. The LED display shows "Err3" indicating the controls are not in their proper position.	Moving to STAND-BY	Moving to REGENERATION COMPLETE/TREATED WATER
6. Wait for the "Err3" message to clear indicating the controls have reached their proper position.	STAND-BY	REGENERATION COMPLETE/TREATED WATER
7. Observe the display alternating between the Capacity Remaining and flow on Tank 2. Press any button to get the flow reading if the display is alternating between Capacity Remaining and Time of Day.	STAND-BY	REGENERATION COMPLETE/TREATED WATER
8. The system is now ready for operation.	STAND-BY	REGENERATION COMPLETE/TREATED WATER

Table 2 Performa Cv High Flow Control Start Up

Task	Tank 1 Control Position	Tank 2 Control Position
1. Manually rotate camshafts counterclockwise to “LL” of Refill.	TANK 1 START UP POSITION (Refill)	TANK 2 START UP POSITION (Refill)
2. Connect the Tank 1 and Tank 2 Controls with factory-installed 4-pin connector.	TANK 1 START UP POSITION (Refill)	TANK 2 START UP POSITION (Refill)
3. Connect the 12 VAC power supply to the Tank 1 Control.	TANK 1 START UP POSITION (Refill)	TANK 2 START UP POSITION (Refill)
4. Program the Control as indicated in the programming section.	TANK 1 START UP POSITION (Refill)	TANK 2 START UP POSITION (Refill)
5. Exit the Programming Mode. The LED display shows “Err3” indicating the controls are not in their proper position.	Moving to TREATED WATER	Moving to TREATED WATER
6. Wait for the “Err3” message to clear indicating the controls have reached their proper position.	TREATED WATER	TREATED WATER
7. Observe display alternating between the Capacity Remaining Tank 1, Capacity Remaining Tank 2, and Flow. Press any button to get the flow reading if the display is alternating between Capacity Remaining and Time of Day.	TREATED WATER	TREATED WATER
8. The system is now ready for operation.	TREATED WATER	TREATED WATER

3.0 Control Programming

Tables 3 and 4 are the programming tables for the Performa Cv Twin controls. For information on how to program Level I and Level II parameters, see tables in the Performa Cv manual. The instructions show how to program the different parameters.

Table 3 Programming Performa Cv Twin Alternating Softener (962/278)

Parameter						
Name	Description	Range of Values	Minimum Increments	Recommended Program Value	Units of Measure	Notes
P1	Day of Week and Time of Day	(1-7) 1:00 - 12:59 AM or PM Metric (1-7) 0:00 - 23:59	(1 day) 1 minute	Current Day and Time	Hour Minute	Range depends on value selected for P13. For day of week SUN=1, MON=2, TUE=3, WED=4, THU=5, FRI=6, SAT=7. This is the left most digit on the display.
P2	Time of day to start regeneration	1:00 - 12:59 AM or PM 0:00 - 23:59	1	As required	Hour Minute	Range depends on value selected for P13. Use only if P15 = 0 or 1.
P3	Hardness of water	3-250 30-2500	1 10	As required	Grains per gallon Milligrams per liter	Unit of measure depends on value selected for P12. This should be compensated hardness. Add 3 grains for each 1 ppm of iron.
P4	Salt amount	.5-125.0 .2-50.0	.5 .2	Selected from Table 5 or Table 6	Pounds Kilograms	Value equals total amount of salt per regeneration.
P5	Capacity of unit	1-2600 0.1-260.0	1 0.1	Selected from Table 5 or Table 6	Kilograins Kilograms	Calculated true capacity, in kilograins or kilograms, based on resin bed volume and salt dosage.
P6	Refill controller	1 -200	1	Selected from Table 5 or Table 6		This number tells the controller the rate of refill based on the refill control installed. Refill dwell time is calculated to refill the proper amount of water into brine tank.
P7	Brine draw rate	1-200	1	Selected from Table 5 or Table 6		This number tells the controller the draw rate based on the injector size. The dwell time in the draw position is then calculated.
P8	Backwash value	0-200	1	Selected by Tank Size		10"=27, 12"=45, 14"=50, 16"=70, 18"=70, 21"=100.
P9	Backwash time	3-30	1	14*	Minutes	*May be adjusted for application.

Table 3 (Cont'd) Programming Performa Cv Twin Alternating Softener (962/278)

Parameter						
Name	Description	Range of Values	Minimum Increments	Recommended Program Value	Units of Measure	Notes
P10	Slow Rinse Time	8-125	1	40*	Minutes	*May be adjusted for application. This time does not include the calculated brine draw time.
P11	Fast Rinse Time	2-30	1	3*	Minutes	*May be adjusted for application.
P12	Units of measure	0-1	1	0		0=US, 1=Metric
P13	Clock mode	0-1	1	0		0=12-hour clock, 1=24-hour clock
P14	Interval Regeneration (calendar override)	0-30	1	0	Days	0=no calendar override
P15	Not Used in Twin Operation	0		0		
P16	Not Used in Twin Operation	0		0		
P17	Operation type	0-6	1	6		6=Twin Alternating Softener
P18	Salt/Capacity Change Lock Out	0-1	1	0		0=none, 1=Salt/Capacity Change Locked Out
P19	Flow Sensor select	1-4	1	Select from Notes column		1=1.0" Autotrol, 2=2.0" Autotrol, 3=User defined K-factor, 4=User defined pulse equivalent
P20	K-factor or Pulse equivalent	0.01-255.00	.01	See Meter Specifications if P19 is 3 or 4		Number used for Meter K-factor or Pulse equivalent. Only applicable if P19 is set to 3 or 4.
P21	Remote Regeneration Switch Delay	0-254	1	60	Seconds	Time remote switch must be active to start a regeneration. Only applicable if using a remote regeneration switch. If not, leave at default.
P22	Factory Use Only- DO NOT CHANGE			99		

Table 4 Programming Performa Cv High Flow Softener (962/278)

Parameter						
Name	Description	Range of Values	Minimum Increments	Recommended Program Value	Units of Measure	Notes
P1	Day of Week and Time of Day	(1-7) 1:00 - 12:59 AM or PM Metric (1-7) 0:00 - 23:59	(1 day) 1 minute	Current Day and Time	Hour Minute	Range depends on value selected for P13. For day of week SUN=1, MON=2, TUE=3, WED=4, THU=5, FRI=6, SAT=7. This is the left most digit on the display.
P2	Time of day to start regeneration	1:00 - 12:59 AM or PM 0:00 - 23:59	1	As required	Hour Minute	Range depends on value selected for P13. Use only if P15 = 0 or 1.
P3	Hardness of water	3-250 30-2500	1 10	As required	Grains per gallon Milligrams per liter	Unit of measure depends on value selected for P12. This should be compensated hardness. Add 3 grains for each 1 ppm of iron.
P4	Salt amount	.5-125.0 .2-50.0	.5 .2	Selected from Table 5 or Table 6	Pounds Kilograms	Value equals total amount of salt per regeneration.
P5	Capacity of unit	1-2600 0.1-260.0	1 0.1	Selected from Table 5 or Table 6	Kilograins Kilograms	Calculated true capacity, in kilograins or kilograms, based on resin bed volume and salt dosage.
P6	Refill controller	1 -200	1	Selected from Table 5 or Table 6		This number tells the controller the rate of refill based on the refill control installed. Refill dwell time is calculated to refill the proper amount of water into brine tank.
P7	Brine draw rate	1-200	1	Selected from Table 5 or Table 6		This number tells the controller the draw rate based on the injector size. The dwell time in the draw position is then calculated.
P8	Backwash value	0-200	1	Selected by Tank Size		10"=27, 12"=45, 14"=50, 16"=70, 18"=70, 21"=100.
P9	Backwash time	3-30	1	14*	Minutes	*May be adjusted for application.
P10	Slow Rinse Time	8-125	1	40*	Minutes	*May be adjusted for application. This time does not include the calculated brine draw time.
P11	Fast Rinse Time	2-30	1	3*	Minutes	*May be adjusted for application.
P12	Units of measure	0-1	1	0		0=US, 1=Metric
P13	Clock mode	0-1	1	0		0=12-hour clock, 1=24-hour clock

Table 4 (Cont'd) Programming Performa Cv High Flow Softener (962/278)

Parameter						
Name	Description	Range of Values	Minimum Increments	Recommended Program Value	Units of Measure	Notes
P14	Interval Regeneration (calendar override)	0-30	1	0	Days	0=no calendar override
P15	Reserve Type	0-3	1	0		See Demand Initiated Modes for High Flow systems, page 13 in Manual.
P16	Initial average usage or fixed reserve	0-70	1	30	Percent of Total Capacity	See Parameter P16, page 26 of Performa Cv Manual.
P17	Operation type	0-6	1	5		5=Twain High Flow Softener
P18	Salt/Capacity Change Lock Out	0-1	1	0		0=none, 1=Salt/Capacity Change Locked Out
P19	Flow Sensor select	1-4	1	Select from Notes column		1=1.0" Autotrol, 2=2.0" Autotrol, 3=User defined K-factor, 4=User defined pulse equivalent
P20	K-factor or Pulse equivalent	0.01-255.00	.01	See Meter Specifications if P19 is 3 or 4		Number used for Meter K-factor or Pulse equivalent. Only applicable if P19 is 3 or 4.
P21	Remote Regeneration Switch Delay	0-254	1	60	Seconds	Time remote switch must be active to start a regeneration. Only applicable if using a remote regeneration switch. If not, leave at default.
P22	Factory Use Only- DO NOT CHANGE			99		Do not change.

Demand Initiated Regeneration Modes for High Flow Systems

Parameter P15 is used to determine the method for demand initiated regeneration. Four regeneration modes are possible.

- P15 = 0, Delayed Regeneration with Smart Reserve Regenerations will start only at the Time of Regeneration entered in P2. A tank is regenerated if the capacity remaining in that tank is below the minimum required capacity needed to meet the next days calculated water usage requirement. The next days water usage number is based on the daily average water usage held in NOVRAM plus a 20% reserve. If necessary both tanks will be regenerated sequentially beginning with the most exhausted tank.

This option allows the control to vary the reserve, and therefore the decision to regenerate, based on the actual daily water usage pattern for the location at which it is installed. See Chart 1.

- P15 = 1, Delayed Regeneration with Fixed Reserve Regenerations will start only at the Time of Regeneration entered in P2. A tank is regenerated if the capacity remaining in that tank is below the percentage entered in P16.

If either tanks capacity is overrun by 50% a regeneration will take place. The control will also cause both tanks to be regenerated sequentially the next Time of Regeneration regardless of how much water is used during that 24 hour period.

This feature is to help recover a severely exhausted bed. See Chart 2.

- P15 = 2, Immediate Regeneration - Fixed Reserve/ Delayed Regeneration-Smart Reserve. This option uses the features of both option 0 and option 3. This is the most versatile of regeneration options. Option number 2 provides all the advantages of variable reserve based on the actual capability to react to the excessive water usage days that occur occasionally. See Chart 3.
- P15 = 3, Immediate Regeneration - Fixed Reserve Regenerations are started immediately when a tank reaches zero or when the system capacity remaining (capacity remaining in both tanks) drops below the reserve capacity programmed in P16. To prevent hard water this reserve should be set large enough to provide conditioned water during the regeneration of the most exhausted tank. See Chart 4.

Chart 1 (P15 = 0)

Priority	Flow Rate	Continuous Soft Water	Efficiency
High	●		
Ave		●	●
Low			

Chart 2 (P15 = 1)

Priority	Flow Rate	Continuous Soft Water	Efficiency
High	●		
Ave		●	
Low			●

Chart 3 (P15 = 2)

Priority	Flow Rate	Continuous Soft Water	Efficiency
High		●	
Ave	●		●
Low			

Chart 4 (P15 = 3)

Priority	Flow Rate	Continuous Soft Water	Efficiency
High		●	●
Ave			
Low	●		

Table 5

P5 Capacity Setting Kilograins (Kilograms)	Resin Volume per Tank (Liters)							
	0.5 Ft ³ (14)	0.75 Ft ³ (21)	1.0 Ft ³ (28)	1.25 Ft ³ (35)	1.5 Ft ³ (42)	1.75 Ft ³ (50)	2.0 Ft ³ (57)	2.5 Ft ³ (71)
12 (0.77)	4.6 (2.1)	—	—	—	—	—	—	—
16 (1.0)	9.0 (4.1)	5.6 (2.5)	—	—	—	—	—	—
20 (1.3)	—	8.6 (3.9)	6.0 (2.7)	—	—	—	—	—
24(1.6)	—	14.0 (6.4)	8.6 (3.9)	7.0 (3.2)	—	—	—	—
30 (1.9)	—	—	15.0 (6.8)	11.0 (5.0)	9.0 (4.1)	—	—	—
32 (2.1)	—	—	18.6 (8.4)	12.6 (5.7)	10.0 (4.5)	9.0 (4.1)	—	—
35 (2.3)	—	—	—	16.0 (7.3)	12.0 (5.4)	10.0 (4.5)	9.0 (4.1)	—
40 (2.6)	—	—	—	23.0 (10.4)	17.0 (7.7)	14.0 (6.4)	12.0 (5.4)	—
48 (3.1)	—	—	—	—	28.0 (12.7)	21.0 (9.5)	17.0 (7.7)	14.0 (6.4)
60 (3.9)	—	—	—	—	—	—	30.0 (13.6)	21.0 (9.5)
P6 Refill Setting: 8-inch through 13-inch Tanks = 33								
P17 Brine Draw Setting for 8-inch through 13-inch tanks (see below)								
Tank Diameter	Injector	Part Number	P7 equals (30 psi)	P7 equals (50 psi)	P7 equals (70 psi)	Color		
13 inch (33 cm)	D	1030272	32	48	60	Green		
12 inch (30.5 cm)	C	1032972	29	37	40	Red		
10 inch (25.4 cm)	C	1032972	29	37	40	Red		
9 inch (22.9 cm)	B	1032971	24	30	37	Blue		
8 inch (20.3 cm)	B	1032971	24	30	37	Blue		

**Table 6 Suggested Settings for P4, P5, P6 and P7
14 to 21-inch Tanks**

P5 Capacity Setting Kilograins (Kilograms)	Resin Volume per Tank (liters)				
	3 ft ³ (85)	4 ft ³ (113)	5 ft ³ (142)	6 ft ³ (170)	7 ft ³ (198)
P4 Salt Setting: Pounds (kg) of Salt					
60 (3.9)	18 (8.2)	-	-	-	-
80 (5.2)	-	24 (10.9)	-	-	-
84 (5.4)	30 (13.6)	-	-	-	-
90 (5.8)	45 (20.4)	-	-	-	-
100 (6.4)	-	-	30 (27.2)	-	-
112 (7.2)	-	40 (18.1)	-	-	-
120 (7.7)	-	60 (27.2)	-	36 (16.3)	-
140 (9.0)	-	-	50 (22.7)	-	42 (19)
150 (9.7)	-	-	75 (34)	-	-
168 (10.8)	-	-	-	60 (27.2)	-
180 (11.6)	-	-	-	90 (40.8)	-
196 (12.7)	-	-	-	-	70 (31.8)
210 (13.6)	-	-	-	-	105 (47.6)
P6 Refill Setting: 14-inch tank = 74 16 inch through 21-inch tanks = 130					
P7 Brine Draw Setting. All values are based on 50 psi (3.5 bar) inlet pressure. For pressure other than 50 psi refer to brine draw charts in Section 4.3 in the Performa Cv manual.					
Tank Diameter	Injector	Part Number	P7 equals	Color	
14 in (35.5 cm)	M	1055737	75	Brown	
16 in (40.6 cm)	Q	1035739	90	Purple	
18 in (45.7 cm)	Q	1035739	80	Purple	
21 in (53.3 cm)	R	1035884	83	Dark Grey	

Regeneration

When the control begins a regeneration, the display will alternate between Flow of the tank in Regeneration Complete position and Regen Time Remaining. If a power outage occurs, the display alternates between Time of Day and Regen Time Remaining when power is restored. The Regen Time Remaining is shown in minutes. The control starts and stops an internal motor, which drives the camshaft through the various regeneration positions. The information entered in the parameters is used to determine how long each part of the cycle should last. The control stops the camshaft at the correct location for each part of the regeneration cycle.

If power fails during a regeneration cycle, the cycle continues when the power is restored. Water flow is not metered during power failures.

Note: The REGEN button is not active when programming Level I or II parameters. Settings cannot be changed when either tank is in regeneration.

Conditioned water is available from the on-line tank when the other tank is in regeneration

Manual Regeneration (Twin Alternating)

- To initiate a regeneration of the on-line tank, press the REGEN button for 3 seconds.
- To initiate a regeneration on the standby tank, first use the left arrow button to select the tank and then press the REGEN button for 3 seconds.
- To initiate a regeneration on both tanks, press and hold the REGEN button for 3 seconds then wait at least 1 minute after the regeneration has begun and press and hold the REGEN button again for 3 seconds. A regeneration will start on the second tank immediately after the first tank has completed its regeneration. Display will lock on REGEN TIME REMAINING to indicate back to back regenerations were requested.

Manual Regeneration (Parallel Unit)

- To initiate a regeneration on both tanks, press and hold the REGEN button for 3 seconds. The tanks will be regenerated sequentially starting with the tank having the least capacity.
- If the REGEN button is activated one or more minutes after a regeneration is started, both tanks will be regenerated twice.
- To regenerate a single tank, use the left arrow button to select the tank. Pressing the left arrow button once will cause the number “1” to appear as the left most digit. Pressing the button again will display a “2”. Pressing the REGEN button when the desired tank is displayed will cause the tank to regenerate. If no key is pressed for 30 seconds, the display will revert to alternating between Flow and Capacity.

Remote Regeneration

A set of terminals is provided as a standard feature of the Performa Cv Twin control that allows regeneration to be initiated from a remote location. This feature can be used to facilitate manual regeneration requirements or assist in further automating the control system.

Service

To leave one tank in the system operational while the other is being serviced, it is necessary to have a bypass at the valve. If the bypass is remote from the valve, the whole system will have to be bypassed to service either of the valves.

Note: The tank on-line cannot be regenerated while the other unit is isolated. When one valve/tank is isolated there is no water available for backwash. Power should be removed from the control to prevent an automatic regeneration.

Start-Up Procedure After Servicing (Twin Alternating)

Follow the procedure in Table 7 anytime either cam is rotated. This procedure will synchronize the position of the valve cams with the control. The softener may block all service flow when an automatic regeneration is started if the control is not synchronized with the cam positions. This procedure will also determine if there are any hardware failures in the controls.

Table 7 Post-Service Start-Up Procedure For Twin Alternating

Task	Tank 1 Control Position	Tank 2 Control Position
1. Manually rotate camshafts counterclockwise to startup positions indicated	TANK 1 START UP POSITION (Slow Rinse)	TANK 2 START UP POSITION (Refill)
2. Connect the 12 VAC power supply to the Tank 1 control. Verify the LED display shows "Err3" indicating the controls are not in their home position.	Moving to STAND-BY	REGENERATION COMPLETE/TREATED WATER
3. Wait for the "Err3" message to clear indicating the controls have reached their home position.	STAND-BY	REGENERATION COMPLETE/TREATED WATER
4. Observe the display alternating between the Capacity Remaining and flow on Tank 2. Press any button to get the flow reading if the display is alternating between Capacity Remaining and Time of Day.	STAND-BY	REGENERATION COMPLETE/TREATED WATER
5. Initiate a manual regeneration on both tanks if either tank had been exhausted before servicing.	STAND-BY	REGENERATION COMPLETE/TREATED WATER

4.0 Replacement Parts



Figure 7 — Performa Cv Twin Controls

Refer to pages 44 and 45 in the Performa Cv Manual for valve replacement parts.

Code	Part No.	Description	Qty.
1	1230696	Performa Cv Twin Alternating Main Control	1
2	1230697	Performa Cv Twin Alternating Secondary Control	1
3	1231033	Performa Cv High Flow Main Control	1
4	1231035	Performa Cv High Flow Secondary Control	1
*	1030377	Performa Cv Twin Alternating and High Flow Cam Shaft	1
*	1231291	Deluxe Interconnecting Manifold Kit	1
*	1030206	Interconnecting Manifold Kit (no bypass)	1
*	1030129	Interconnecting Manifold Kit (piping only)	1
*	1040930	1265 Bypass	1

* Not Shown



