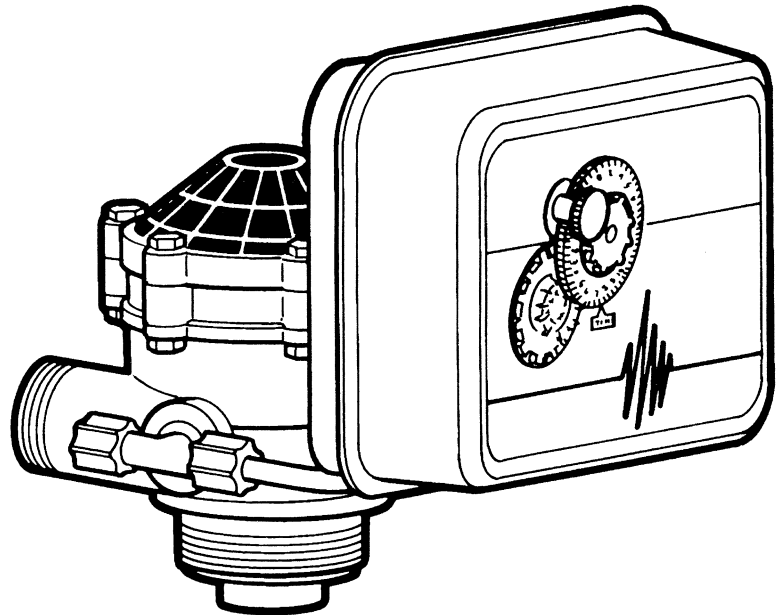
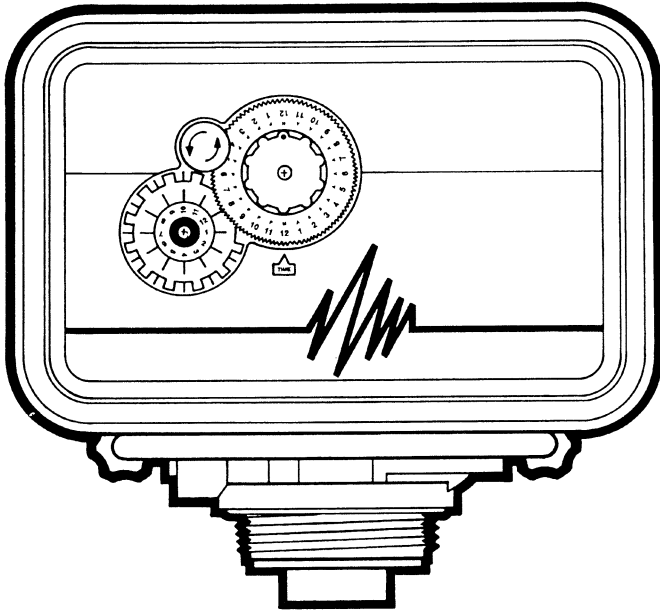


568 VALVE

WATER CONDITIONING CONTROLS



SERVICE MANUAL

The 568 Valve has been certified according to NSF/ANSI 44 by the Water Quality Association for material safety and structural integrity only.

Assembly:

1. Cut the top of the riser tube 1/2 inch below the top of the tank threads.
2. Chamfer the tube to prepare it for insertion into the control valve.
3. Verify that the control is equipped with the proper voltage, injector, Back Wash Flow Control, and Brine Line Flow Control.
4. Lower the control straight down onto the riser tube.
5. Grip the valve body and turn the control into the resin tank threads.

Installation:

General Information

1. When facing the front of the control the inlet is to the left and the outlet is to the right.
2. The system pressure must be between 20 psi and 120 psi.
3. If the system pressure is greater than 120 psi a pressure reducing valve must be installed.
4. The unit must be installed in accordance with local codes.
5. Do not over tighten connections.

Note: Systems installed outside require a weather cover (p/n 568-330-11) for the control power head, not doing so will void the factory warranty.

Drain Line Connection

1. The drain line I.D. must be at least 1/2".
2. Teflon Tape should be used on the drain fitting.
3. Drain line must be free of kinks.
4. The drain line may be run a maximum of 48" above the top of the control valve.

Brine Line Connection

1. An air check is required for proper operation during regeneration.
2. If a safety float is used it must be set high enough to prevent premature shutoff during the brine fill cycle.

Bypass Connection

1. Insure that the bypass is in the service position prior to operating the unit.

2. DO NOT use Teflon tape when connecting the fitting kit to the integral bypass connections.
3. If the fitting kit provides a sweat connection, care must be taken to prevent the bypass manifold and the fitting kit union nut from melting.
Note: Do not connect the fitting kit to the bypass prior to sweat fitting the copper adapter.
4. Place a wet rag over the copper tube and the Noryl nut prior to heating the tube.

Fitting Kit Connection

1. DO NOT use Teflon tape when connecting the fitting kit to the control valve.
2. If the fitting kit provides a sweat connection, care must be taken to prevent the Noryl nut from melting.
3. Place a wet rag over the copper tube and the Noryl nut prior to heating the tube.

Start Up:

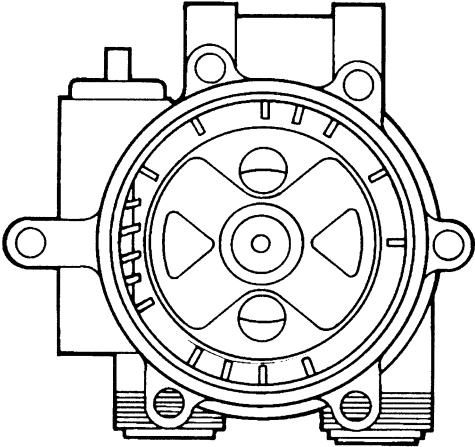
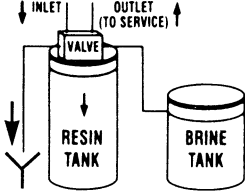
1. Insure that the bypass valve is secured in the "bypass" position.
2. Verify that the control valve is in the service position.
3. Open all plumbing connections to allow the free flow of water to the unit.
4. Slowly shift the bypass valve to the service position and secure it.
5. Allow water to completely fill the resin tank.
6. Open a tap and allow softened water to run until all of the air is removed from the system.
7. Once all of the air is removed, close the tap.
8. Follow the Initial Start Up instructions found in the **Programming** section of this manual.
9. Manually advance the control valve to the backwash position and allow water to run to drain for a period of 3 - 4 minutes.
10. Using a pail, fill the brine tank with water to the top of the air check.
11. Manually advance the control valve to the brine/slow rinse position.
12. Allow the control valve to draw water from the brine tank until the air check checks.
13. Manually advance the control valve to the Fast Rinse / Brine Fill position.
14. Allow the control valve to fill the brine tank and return to service automatically.
15. Add the appropriate amount of salt to the brine tank.

Cycle Flow Diagrams

1. Service (Downflow)

The service cycle position directs untreated water to flow down through the mineral tank and up through the riser tube. The water is conditioned/filtered when passing through the mineral tank.

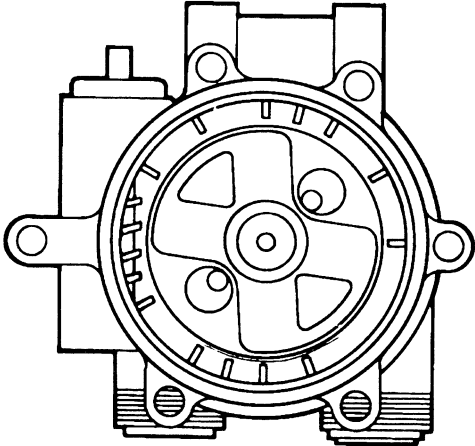
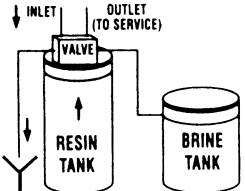
In service, the Cam/Rotor ports are located directly over the valve body ports.



2. Backwash (Upflow)

The backwash cycle directs water down the riser tube and up through the media in the mineral tank. Any debris and/or filtered material are flushed from the media during this cycle.

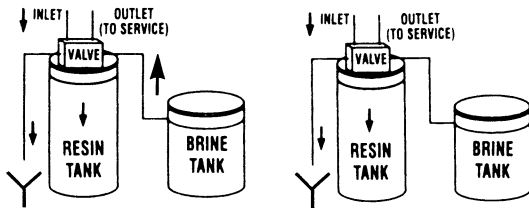
In backwash, the Cam/Rotor has rotated 45 degrees placing the port over both backwash ports in the valve body.



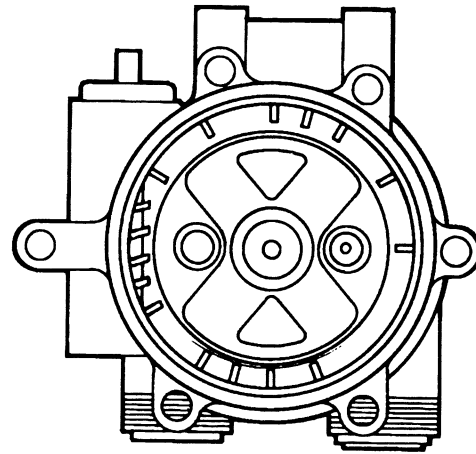
3. Brine/Slow Rinse (Downflow)

In softener systems, brine is drawn from the brine tank and flows down through the media in the mineral tank and up through the riser tube. This process regenerates the media. Brine is drawn until the air check in the brine tank closes.

Once the air check closes the system is in slow rinse. This does not involve any movement within the control. The slow rinse cycle consists of a slow flow of water down through the media and up through the riser tube.

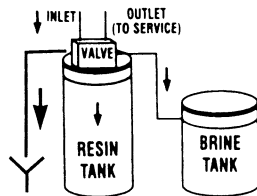


In brine/slow rinse, the Cam/Rotor has now rotated 90 degrees from the service position, placing the cam/rotor ports over the injector and hard water bypass ports.

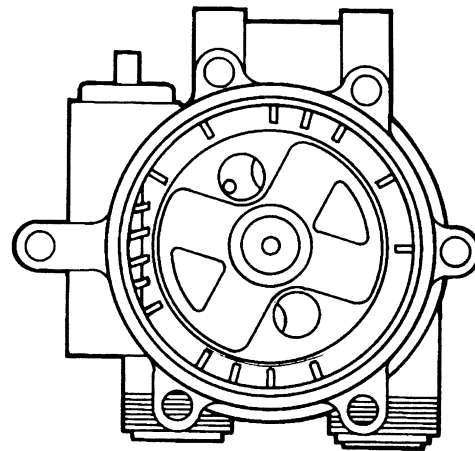


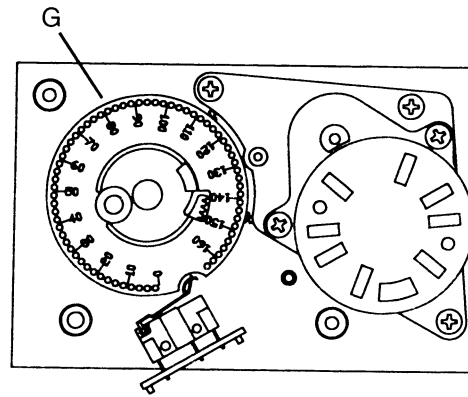
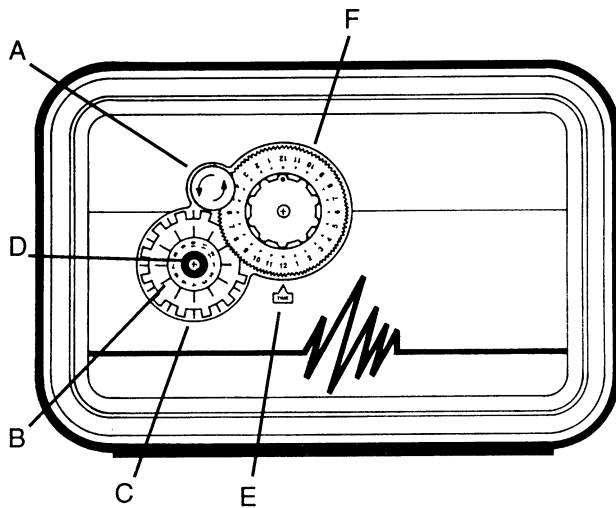
4. Fast Rinse/Brine Refill (Downflow)

Timed brine refill and fast rinse occur simultaneously. The fast rinse cycle directs water down through the media and up through the riser tube to remove any remaining brine. Brine refill occurs as water is allowed to flow to the brine tank.



In fast rinse, the Cam/Rotor ports are now located partly over the service ports and refill ports.





Programming:

General Information

The control valve is designed to initiate regeneration according to pre-set factory parameters. Following the instructions contained in this section will allow the installer to customize the program for the users exact needs.

The regeneration cycle times are controlled by groups of pins or spaces. Each pin or space corresponds to 2.5 minutes of time. The cycle times are adjusted by increasing or decreasing the number of pins or spaces.

Note: This minimum cycle time is 5 minutes. This corresponds to 2 pins or 2 spaces.

Factory Default Settings

The following factory default time settings are pre-programmed into the control valve.

Model A15

Backwash	10 minutes (5 pins)
Brine / Slow Rinse	60 Minutes (24 spaces)
Fast Rinse / Fill	5 Minutes (2 pins)

Model F15

Backwash	10 minutes (5 pins)
Brine / Slow Rinse	5 minutes (2 spaces)
Fast Rinse	5 minutes (2 pins)

Time Of Day

To set the Time Of Day, turn the clock drive knob (A) counter clockwise until the correct time of day is aligned with the "time" mark (E).

Time Of Regeneration

Softener control valves are programmed to initiate a regeneration at 3:00 a.m. on the designated days. Softener controls can be identified by **black** lettering on the clock face (F). There is no direct adjustment to this function.

Filter control valves are programmed to initiate a regeneration at 1:00 a.m. on the designated days. Filter controls can be identified by **red** lettering on the clock face (F). There is no direct adjustment to this function.

Day(s) Of Regeneration

1. Pull all skipper tabs (B) out.
2. Rotate the skipper wheel (C) until tab #1 is aligned with the Day Indicator Arrow (D).
3. Push in the tabs (B) which correspond with the desired days of regeneration.

Note: Regeneration will not occur on days whose corresponding tabs are left in the "out" position.

Regeneration Cycles

Customizing the regeneration cycles requires access to the timer cycle wheel (G) located on the back side of the timer. The timer cycle

wheel can be accessed according to the following procedure.

1. Insure that the control valve is in the service position.
2. Disconnect all electrical power to the control.
3. Loosen the three (3) cover screws and remove the cover.
4. Remove the two (2) timer mounting screws from the back side of the back plate.
5. Lift the timer assembly away from the back plate.
6. Locate the timer cycle wheel (G) on the back side of the timer assembly.
7. Follow these procedures in reverse to reinstall the timer assembly.

Each pin or space in the cycle timer wheel represents 2.5 minutes of cycle time. There is a maximum of 165 minutes allowable for regeneration cycle programming. A minimum of 5 minutes (either 2 pins or 2 spaces) for each of the three (3) cycles is required for proper functioning of the control valve.

Beginning at zero (0) the length of the backwash cycle is determined by the number of consecutive pins.

The length of the brine / slow rinse cycle is then determined by the number of consecutive spaces. For model 568F15 control valves this cycle time is pre-set at 5 minutes. Even though no brining will occur, the two(2) consecutive spaces are required for proper control valve operation.

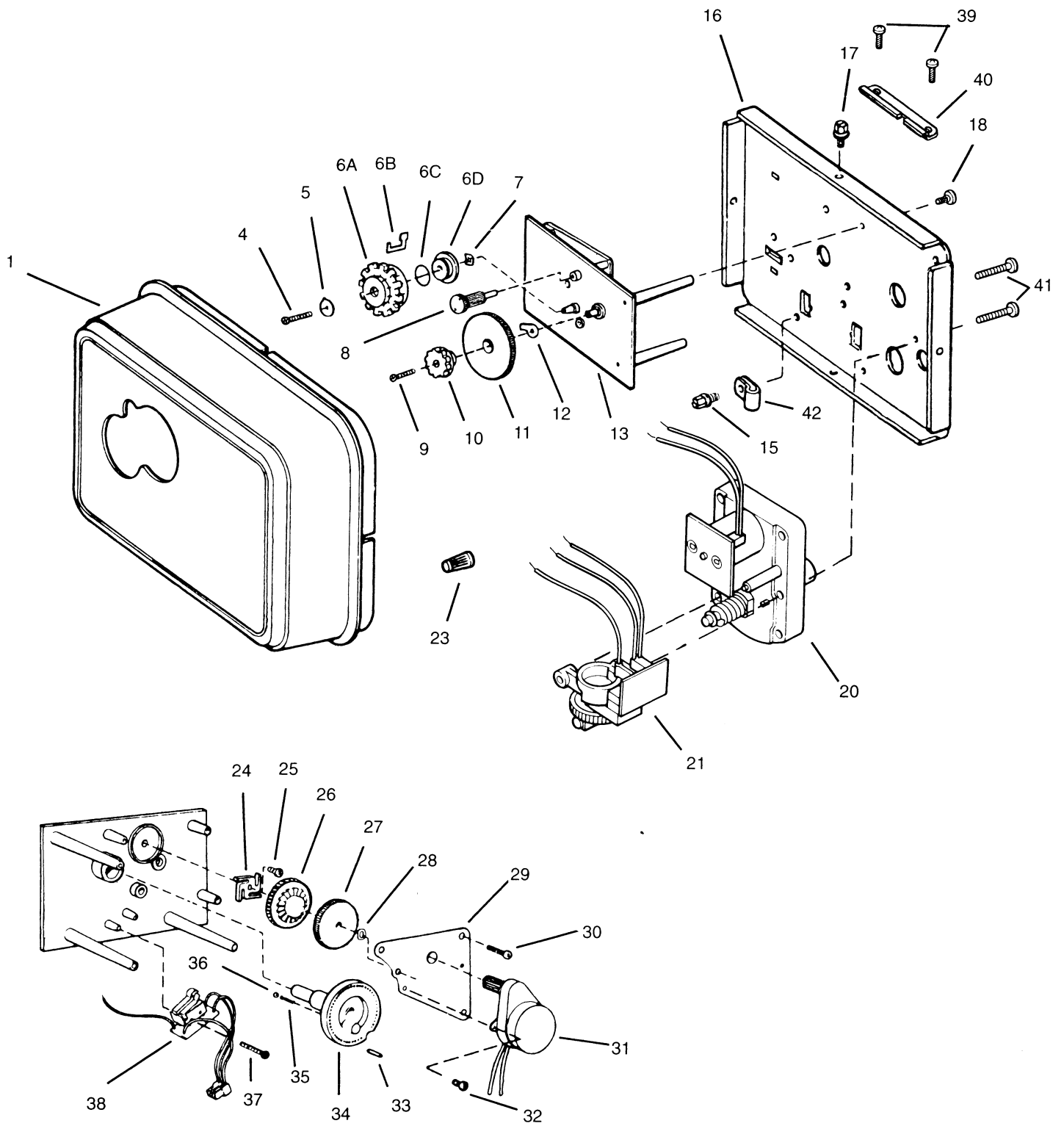
The length of the fast rinse cycle is determined by the second consecutive group of pins.

To customize the cycle times simply regroup the pin / space arrangements to correspond with the desired cycle times.

NOTE: THERE SHOULD ONLY BE TWO (2) PIN GROUPINGS.

ELECTROMECHANICAL POWER HEAD PARTS LIST

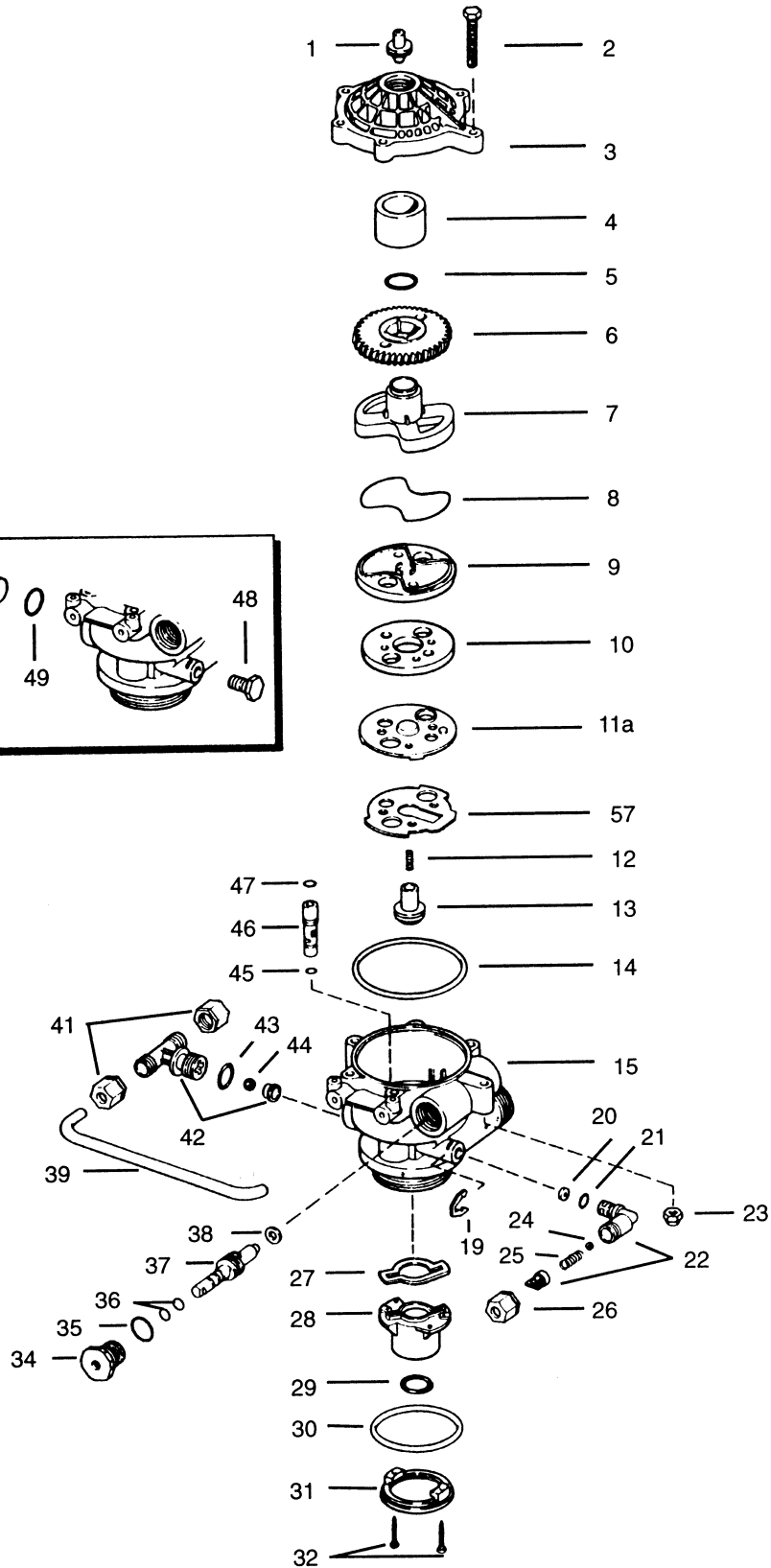
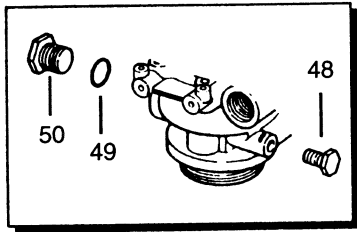
<u>ITEM</u>	<u>P/N</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1.	568-360-*	Timer Cover	1
4.	15-200-7	Screw, Skipper Wheel	1
5.	3003-203-2	Day Indicator	1
6 A - D.	3003-201-2	12 Day Skipper Wheel Assembly	1
7.	3003-202	Spring Washer	1
8.	3003-205	Clock Drive Knob	1
9.	15-200-7	Screw, Regeneration Knob	1
10.	3003-211	Regeneration Knob	1
11.	3003-210	Clock Face Gear	1
12.	3003-212	Pawl	1
13.	568-365	Timer Base	1
15.	15-41-1	Screw	1
16.	568-348-5	Back Plate	1
17.	14-41-1	Screw, Timer Cover	3
18.	15-204-8	Screw, Timer Mount	2
19.	15-222	Screw, Gear Motor Mount	2
20.	568-394	Drive Motor	1
21.	568-296	Cam/Switch & Bracket Assembly	1
23	28-26	Wire Connector	3
24.	3003-206	Ratchet	1
25.	15-102	Screw, Ratchet	1
26.	3003-207	Ratchet Gear	1
27.	3003-208	Drive Gear	1
28.	3003-215	Spring Washer, Ratchet	1
29.	3003-213-12	Motor Mount Plate	1
30.	15-200-7	Screw, Motor Mount Plate	3
31.	30-123-*	Timer Motor	1
32.	15-197-4	Screw, Timer Motor	2
33.	3003-216	Cycle Pin	12
34.	3003-209	Cycle Wheel	1
35.	407-210-2	Spring	1
36.	26-30-1	Ball	1
37.	15-173-12	Screw, Switch Mount	2
38.	3003-219-3	Switch/Circuit Board, Timer	1
39.	15-131	Screw, Back Plate Mount	2
40.	568-399	Support Bracket	1
41.	15-222	Screw, Motor/Switch Mount	2
42.	28-245-2	Clamp	1



VALVE BODY PARTS LIST

<u>ITEM</u>	<u>P/N</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1.	568-271-*	Backwash Flow Control	1
2.	568-223	Bolt, Valve Cover	6
3.	568-254-3	Valve Cover	1
4.	568-332	Sleeve	1
5.	186-112	O-ring, White	1
6.	568-260	Worm Gear	1
7.	568-259	Cam	1
8.	185-041-1	O-ring, Cam/Rotor	1
9.	568-345-2	Rotor Plate	1
10.	568-256	Seal Plate	1
11a.	568-383	Insert Plate	1
12.	413-62	Spring	1
13.	568-270-2	Float Valve/O-Ring Assembly	1
14.	185-154-1	O-ring, Valve Cover	1
15.	568-253	Valve Body	1
19.	541-254	Retainer Clip	1
23.	568-224	Nut, Valve Cover	6
27.	570-251	Gasket, Riser	1
28.	568-334	Riser	1
29.	185-214-1	O-ring, Riser	1
30.	185-337-1	O-ring, Tank	1
31.	541-232	Adapter, Upper Distributor	1
32.	15-207-12	Screw, Adapter	2
34.	568-216-3	Packing Gland Nut	1
35.	185-211-1	O-ring, Packing Gland	1
36.	186-115	O-ring, Worm Drive Shaft	2
37.	568-208-2	Worm Drive Shaft	1
38.	14-43	Washer, Worm Drive Shaft	1
45.	185-011-1	O-ring, Injector, Lower	1
46.	568-215-1	Injector, #1	1
47.	186-107	O-ring, Injector, Upper	1
48.	541-277	Filter Plug, Small	1
49.	185-208-1	O-ring, Filter Plug Large	1
50.	21-72-3	Filter Plug Large	1

* -- Specify Size



Troubleshooting Guide:

Symptom / Cause	Solution
1. Unit Fails To Regenerate	
A. Faulty electrical supply.	A. Verify electrical service (fuse, circuit breaker, light switch, pull chain, power cord).
B. Defective drive motor.	B. Replace drive motor.
C. Low inlet pressure.	C. Verify that service inlet pressure is a minimum of 20 psi.
D. Drain line is restricted.	D. Insure that drain line is free of kinks. Index control to backwash and verify flow rate.
E. Defective timer motor.	E. Replace timer motor.
F. Plugged backwash flow control (BWFC).	F. Inspect BWFC to insure it is free of debris.
G. All skipper tabs in the "out" position.	G. Push desired skipper tabs to the "in" position.
H. The injector is plugged.	H. Clean the injector.
2. Hard Water To Service	
A. The bypass valve is open or defective.	A. Insure that the bypass valve is in the service position. Check for leaks and replace if necessary.
B. No salt in the storage tank.	B. Add salt.
C. Not enough water in the brine tank.	C. Verify that refill time corresponds to the proper salt level and amount of media.
D. Unit fails to draw brine.	D. See Symptom/Cause #7.
E. Excessive water usage.	E. Verify capacity and reserve settings.
F. Loss of resin.	F. See Symptom/Cause #4.
G. Change in raw water hardness.	G. Test the raw water hardness and adjust programming accordingly.
H. Leak at the distributor tube.	H. Verify that the distributor tube is seated correctly and is not cracked.
3. Unit Uses Too Much Salt	
A. Improper brine refill setting.	A. Verify that refill time corresponds to the proper salt level and amount of media.
B. Excessive water in the brine tank.	B. See Symptom/Cause #6.
C. Unit regenerating too frequently.	C. Check capacity and reserve settings.
4. Loss Of Resin	
A. Backwash flow controller (BWFC) is missing or incorrectly sized.	A. Verify that the BWFC is installed and is correctly sized for the unit.
B. Air in the system.	B. Verify that the system has an air eliminator. Check a well for dry well condition.
5. Salt Water To Service	
A. Brine/Slow Rinse cycle time set too short.	A. Verify cycle time.
B. Excessive water in the brine tank.	B. See Symptom/Cause #6.
C. Injector plugged or undersized.	C. Clean the injector and verify proper selection.

Symptom / Cause

Solution

6. Excessive Water In The Brine Tank

- A. Injector is plugged.
- B. Defective or damaged sealplate.

- C. Cam / Rotor assembly is out of synchronization.
- D. The check ball in the brine tee is dirty.
- E. Refill cycle set incorrectly.
- F. Drain line is restricted.

- G. Plugged backwash flow control (BWFC).

- A. Clean and/or replace the injector.
- B. Replace the sealplate. Follow the procedure detailed in the Parts Replacement section of this manual.
- C. Synchronize the Cam / Rotor assembly.
- D. Remove the brine tee and clean the check ball. Inspect tee for debris.
- E. Verify that the refill time corresponds with the proper salt level and amount of media.
- F. Insure that drain line is free of kinks. Index the control to backwash and verify flow rate.
- G. Inspect BWFC to insure it is free of debris.

7. Unit Fails To Draw Brine

- A. Injector is plugged.
- B. Loose brine line connection.

- C. Drain line is restricted.

- D. Low inlet pressure.
- E. Improper installation of distributor pipe.

- A. Clean and/or replace the injector.
- B. Verify that all brine line connections are tight.
- C. Insure that drain line is free of kinks. Index the control to backwash and verify flow rate.
- D. Verify that service inlet pressure is a minimum of 20 psi.
- E. Verify that the distributor pipe is cut 1/2 inch below the top of the tank threads.

8. Continuous Flow To Drain

- A. Defective or damaged sealplate.

- B. Cam / Rotor assembly is out of synchronization.
- C. White, Teflon O-ring is missing or damaged.
- D. Drive motor failure.

- A. Replace the sealplate. Follow the procedure detailed in the Parts Replacement section of this manual.
- B. Synchronize the Cam / Rotor assembly.
- C. Reinstall or replace.
- D. Replace the drive motor.

9. Loss Of Water Pressure

- A. Iron build-up in mineral tank.

- B. Iron build-up in the line leading to the control valve inlet.
- C. Lower distributor basket crushed.

- A. Clean the resin bed and the control valve. Increase the frequency of regeneration.
- B. Clean the water line.
- C. Replace the lower distributor basket. Insure that the top of the distributor pipe is cut 1/2 inch below the top of the tank threads.

10. Control Cycles Continuously

- A. Defective gear motor microswitch assembly.
- B. Loose timing cam set screw.

- A. Replace gear motor microswitch assembly.
- B. Synchronize the power head and the Cam / Rotor assembly. Tighten the set screw.

Parts Replacement:

General Information

Familiarize yourself with the parts replacement procedures and component parts thoroughly before attempting any repair.

Insure that the unit is in the bypass position and relieve the system pressure before attempting any repair procedure.

WARNING! Disconnect all electrical power to the unit before attempting any repair procedure.

Required Tools

The following tools are required to perform routine maintenance on this control valve:

- 1/2" Socket Drive
- 5/16" Socket Drive
- 1/2" Combination Wrench
- 3/8" Allen Wrench
- Needle Nose Pliers
- Phillips Screwdriver
- Standard Screwdriver
- Adjustable Wrench

Timer Assembly Replacement

1. Insure that the control valve is in the service position.
2. Disconnect all electrical power to the control.
3. Place the bypass valve in the "bypass" position.
4. Relieve the system pressure.
5. Loosen the three (3) cover screws and remove the cover.
6. Disconnect the timer position switch leads from the gear motor microswitches.
7. Disconnect the timer motor wire leads from the power cord leads.
8. Remove the two (2) timer mounting screws from the back side of the back plate.
9. Lift the timer assembly away from the back plate.
10. Follow these steps in reverse to reinstall the timer assembly.

Drive Motor Replacement

1. Disconnect all electrical power to the control.

2. Place the bypass valve in the "bypass" position.
3. Relieve the system pressure.
4. Remove the two (2) screws which secure the back plate to the valve body.
5. Separate the powerhead assembly from the valve body.
6. Loosen the three (3) cover screws and remove the cover.
7. Disconnect the remaining motor lead from the timer assembly.
8. Remove the two (2) motor mounting screws from the back side of the back plate and remove the drive motor.
9. Follow these steps in reverse to reassemble the drive motor.

Cam / Rotor & Sealplate Replacement

1. Insure that the control valve is in the service position.
2. Disconnect all electrical power to the control.
3. Place the bypass valve in the "bypass" position.
4. Relieve the system pressure.
5. Remove the six (6) bolts which secure the valve cover.
6. Lift the valve cover away from the valve body.
7. Remove the cam / rotor assembly from the valve cover.
8. The white Teflon o-ring will remain in the valve cover. Inspect the o-ring for wear and replace it if necessary.
9. Separate the worm gear from the cam / rotor assembly.
10. Inspect the cam / rotor surface. The surface should be smooth and free of any circular groves or scratches.
11. Remove the sealplate from the valve body.
12. Inspect the sealplate. Insure that the raised ribs are intact. The green Teflon coating may be worn off of the ribs. This is normal and will not effect valve performance.
13. Use Dow 111 Silicone Based Lubricant to lightly lubricate the green side of the sealplate.
14. Reinstall the sealplate in the valve body.
15. Insure that the cam / rotor assembly is pressed together securely.
16. Reinstall the worm gear on the cam / rotor assembly.
17. Place the cam / rotor and worm gear assembly into the valve body. Insure that the arrow on the worm gear is pointing directly towards the worm drive.

18. Insure that the two holes in the worm gear are exactly aligned with the corresponding holes in the sealplate.
19. Center the PVC sleeve on the worm gear.
20. Insure that the valve cover o-ring is securely installed in the valve cover.
21. Place the six (6) valve cover bolts into the valve cover.
22. Lower the valve cover straight down onto the valve body. Press down firmly and evenly to seat the valve cover.
23. Install the cover nuts and tighten in a cross pattern.
19. Reinstall the worm gear on the cam / rotor assembly.
20. Place the cam / rotor and worm gear assembly into the valve body. Insure that the arrow on the worm gear is pointing directly towards the worm drive.
21. Insure that the two holes in the worm gear are exactly aligned with the corresponding holes in the sealplate.
22. Center the PVC sleeve on the worm gear.
23. Insure that the valve cover o-ring is securely installed in the valve cover..
24. Place the six (6) valve cover bolts into the valve cover.
25. Lower the valve cover straight down onto the valve body. Press down firmly and evenly to seat the valve cover.
26. Install the cover nuts and tighten in a cross pattern.

Injector Replacement

1. Insure that the control valve is in the service position.
2. Disconnect all electrical power to the control.
3. Place the bypass valve in the "bypass" position.
4. Relieve the system pressure.
5. Remove the six (6) bolts which secure the valve cover.
6. Lift the valve cover away from the valve body.
7. Remove the cam / rotor assembly from the valve cover.
8. The white Teflon o-ring will remain in the valve cover. Inspect the o-ring for wear and replace it if necessary.
9. Separate the worm gear from the cam / rotor assembly.
10. Remove the sealplate from the valve body.
11. Using a needle nose pliers grasp one side of the injector and pull straight up from the valve body. The injector, insertplate and insertplate gasket will remain together.
12. Remove the injector from the insert plate and gasket.
13. If installing a new injector, lightly lubricate both o-rings with a silicone based lubricant.
14. When reinstalling the injector insure that one of the rectangular openings on the injector is facing **directly** towards the center of the valve body assembly.
15. Install the gasket into the valve body. Insure that the holes of the gasket match the holes in the valve body.
16. Install the insertplate on to the gasket. If properly seated the insertplate will not rock back and forth,
17. Install the sealplate in the valve body.
18. Insure that the cam / rotor assembly is pressed together securely.

Backwash Flow Control Replacement

1. Insure that the control valve is in the service position.
2. Disconnect all electrical power to the control.
3. Place the bypass valve in the "bypass" position.
4. Relieve the system pressure.
5. Remove the drain fitting from the valve body.
6. Using a 3/8" allen wrench unscrew the flow control from the valve cover.
7. Follow these procedures in reverse to reinstall the flow control.

Brine Line Flow Control Replacement

1. Insure that the control valve is in the service position.
2. Disconnect all electrical power to the control.
3. Place the bypass valve in the "bypass" position.
4. Relieve the system pressure.
5. Using a needle nose pliers, remove the retaining clip which secures the brine elbow to the valve body.
6. Remove the brine elbow assembly from the valve body.
7. If installing a new brine elbow lightly lubricate the o-ring with a silicone based lubricant.

Note: If the retaining clip is bent it must be replaced.

8. Follow these procedures in reverse to reinstall the brine line flow control assembly.

Brine Tee Replacement

1. Insure that the control valve is in the service position.
2. Disconnect all electrical power to the control.
3. Place the bypass valve in the "bypass" position.
4. Relieve the system pressure.
5. Disconnect the brine tank line from the check tee.
6. Disconnect the brine refill tube from the check tee.
7. Disconnect the Tee by turning counter clockwise.
8. Remove the retainer and check ball.
9. Follow the procedures in reverse to reinstall the brine tee.

Units of Hardness:

1 French Degree	= 10 mg CaCO ₃ (Calcium Carbonate) per liter of water
1 German Degree	= 10 mg CaO (Calcium Oxide) per liter of water
1 Clark Degree	= 1 grain CaCO ₃ (Calcium Carbonate) per Imperial Gallon of water
1 grain/US Gallon	= 1 grain CaCO ₃ (Calcium Carbonate) per U.S. Gallon of Water
1 New US & UK unit	= 1 mg CaCO ₃ (Calcium Carbonate) per 1000 grams of water
1 Russian Degree	= 1 mg Ca (Calcium) per liter of water
1 part per million (ppm)	= 1 mg CaCO ₃ (Calcium Carbonate) per 1000 grams of water
1 grain/US Gallon	= 17.1 ppm

	French (°F)	German (°G)	Clark (°C)	Grain (GPG)	US/UK	Russian (°R)	ppm
1 French Degree	1.00	0.560	0.70	0.583	10.0	4.0	10.0
1 German Degree	1.78	1.000	1.25	1.040	17.8	7.2	17.8
1 Clark Degree	1.43	0.800	1.00	0.833	14.3	5.7	14.3
1 grain/US Gallon	1.71	0.958	1.20	1.000	17.1	6.8	17.1
1 New US & UK Unit	0.10	0.056	0.07	0.058	1.0	0.4	1.0
1 Russian Degree	0.25	0.140	0.18	0.150	2.5	1.0	2.5
1 part per million	0.10	0.056	0.07	0.058	1.0	0.4	1.0

Conversion Information:

Length:

1 mile	= 1609 m
1 yd	= 0.9144 m
1 ft	= 0.308 m
1 in	= 25.4 mm
1 mil	= 0.0254 mm

1 km	= 0.621 miles
1 m	= 1.093 yd
1 m	= 3.28 ft
1 cm	= 0.3937 in
1 mm	= 39.37 mil

Area:

1 yd ²	= 0.8361 m ²
1 ft ²	= 0.0929 m ²
1 in ²	= 6.45 cm ²

1 m ²	= 1.196 yd ²
1 m ²	= 10.764 ft ²

Temperature:

1 Degree Celcius	= ((°F-32)*5)/9
1 Degree Farenheit	= ((9*°C)/5)+32

Volume:

1 ft ³	= 28.318 liters
1 liter	= 0.03532 ft ³
1 Gal. US	= 3.785 liters
1 liter	= 0.2642 Gal. US

Pressure:

1 psi	= 6894.76 Pa
1 psi	= 0.06895 bar
1 psi	= 51.715 mm Hg

1 Pa	= .000145 psi
1 bar	= 14.504 psi
1 mm Hg	= 0.0193 psi

Velocity:

1 US Gal/min.	= 3.785 liters/min.
1 US Gal/min.	= 227.1 liters/hr
1 US Gal/min.	= 0.227 m ³ /hr
1 m ³ /hr	= 4.403 US Gal/min.
1 liter/hr	= 0.0044 US Gal/min.

Weight:

1 lb.	= 0.4536 kg
1 kg	= 2.2046 lb.

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