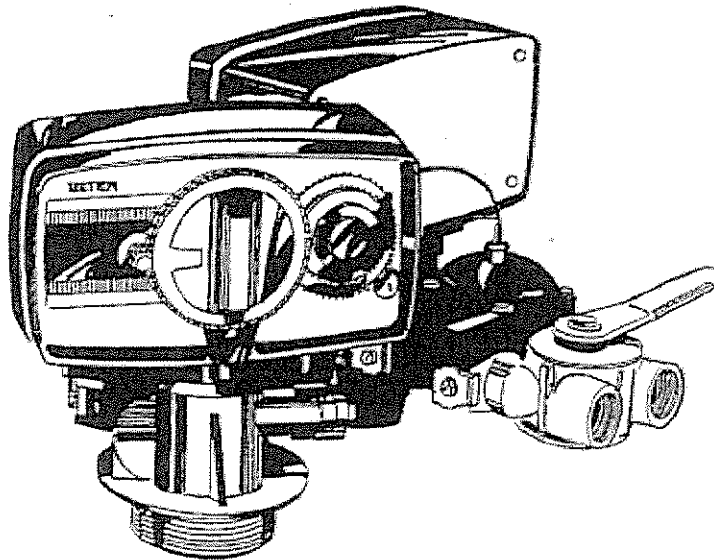


# **WATER TENDER®**

**Quality Water Treatment Products**



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## **WTFDR Series Residential Metered Softeners**

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**Installation and Operation Manual**

March 2015 Version

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# Water Tender

## Installation and Operating Instructions for WTFDR Softeners

_____ WTF240DR	24,000 grain softener
_____ WTF320DR	32,000 grain softener
_____ WTF480DR	48,000 grain softener
_____ WTF640DR	64,000 grain softener

### **Shipping Description:**

- The mineral tank is the taller carton and is shipped with the distributor pipe and gravel support media.
- The smaller tank is the brine tank and is shipped with plastic grid plate assembly, brine tubing, brine well, brine shutoff valve and overflow fittings all assembled at the factory.
- The 5600 control valve is shipped in the brine tank.

### **On Site Requirements:**

- Flow rate 5 gpm minimum
- Minimum 20 psi water pressure
- Check Specification Reference Table for flow rate requirements.
- Adequate drain connection for Regeneration Water

### **Softener Positioning:**

1. Place softener in desired position, far enough from walls and other obstructions to allow room for servicing the unit.
2. Place the softener within reasonable access to a grounded 115V/60 HZ circuit and a legal drain line connection.

### **Softener Tank Loading and 5600 Control Valve Mounting:**

*(Note: Some models already contain the C-800 and don't require filling in the field)*

1. Center the distributor pipe and make sure it is resting on the bottom of the tank. The top of the distributor pipe should be **flush with the top of the tank** (this was prefitted at the factory).
2. Cover the top opening of the distributor pipe with tape before filling the tank with media.
3. Pour the C-800 resin into the top of the tank.
4. Remove the tape from the distributor pipe and clean the tank threads.
5. Place the control valve onto the distributor pipe.
6. Hand tighten the control valve to the tank. **DO NOT OVERTIGHTEN OR 5600 CONTROL VALVE MAY BE DAMAGED.**

### Service and Drain Piping:

1. Pipe softener into the service lines (**Figure 1 on P. 3**) using quality ball valves and the 5600 brass bypass assembly. The inlet and outlet connections of the control valve are 3/4" and are located on the back of the valve body. Always follow local plumbing codes when installing the water treatment equipment.
2. Use unions on inlet, outlet and drain line piping. If sweat fittings are used, be sure soldering is done in such a manner as not to allow heat to reach the valve. If Schedule 80 PVC is used, make sure to follow the proper primer and solvent instructions.
3. The drain line connection must be of adequate size to allow for full regeneration flow.

The control valve drain connection is already installed.

Use only 5/8" poly tubing for drain line.

**Do not overtighten or 5600 control valve may be damaged.**

Maximum drain line length is 20 feet.

Maximum drain line height is 8 feet above the control valve..

The end of the drain line must be piped to an open, vented drain.

Always follow local plumbing codes when piping drain lines to a waste pipe.

**UNDER NO CIRCUMSTANCES SHOULD THERE BE A DIRECT CONNECTION WITH SANITARY SEWAGE FACILITIES.**

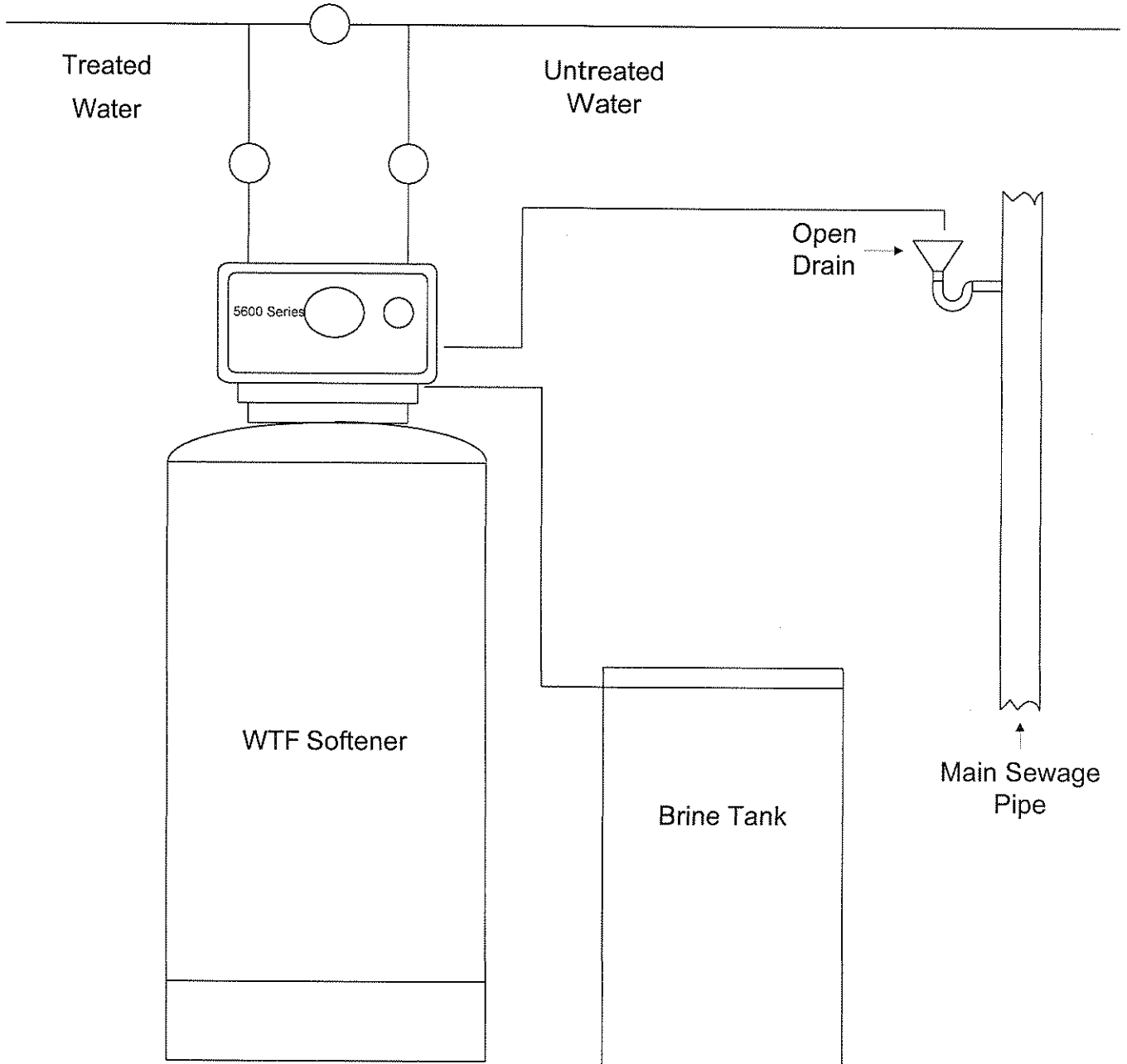
### Brine Tank :

1. The brine tank should be located directly beside the water softener mineral tank.
2. Connect one end of the 3/8" OD poly tubing to the compression fitting on the top of the brine shutoff valve located in the brine tank and the other end to the compression fitting on the 5600 control valve.
3. The brine shutoff valve contains a float that controls the water level in the brine tank. The float height was preset at the factory.

### Specification Reference Table

Model #	Service Flow Rate	Backwash Flow Rate	Backwash Timing	Slow Rinse Timing	Fast Rinse/ Refill Timing	Maximum Salt Setting
WTF240DR	8.0 gpm	1.5 gpm	10 Minutes	50 Minutes	5 Minutes	12 lbs.
WTF320DR	10.0 gpm	2.0 gpm	10 Minutes	50 Minutes	5 Minutes	16 lbs.
WTF480DR	12.0 gpm	2.4 gpm	10 Minutes	50 Minutes	5 Minutes	24 lbs.
WTF640DR	15.0 gpm	3.5 gpm	10 Minutes	50 Minutes	5 Minutes	32 lbs.

Figure 1



### Electrical Supply:

1. Provide a properly grounded 115V/60 HZ electrical outlet.
2. Maximum amperage required is 3 amps.
3. Make sure the electrical service provides power 24 hours per day. Avoid using outlets that are switch controlled.
4. Follow all local electrical codes when installing our water treatment equipment.

### Filling Softener with Water:

(Refer to Figure 2 on P. 5)

1. Close inlet and outlet ball valves.
2. Turn Manual Regeneration Knob in a clockwise direction until you reach the Backwash position.
3. Open inlet ball valve 1/4 turn and allow water to fill tank slowly for approximately 10 minutes. After all air has been purged from tank, fully open inlet ball valve and allow water to run in this position for 15 minutes.
4. Turn the Manual Regeneration Knob in a clockwise direction until you reach the Rapid Rinse position. Allow the unit to stay in this position for approximately 10 minutes to purge the media fines to drain.
5. Plug the timer into the electrical outlet. The timer will automatically advance to the service position after completing the Rapid Rinse cycle. If water runs dirty to service, place unit in backwash position and allow the timer to go through a complete regeneration. The total regeneration will take approximately 2 hours. The unit will be in the service position after regeneration is complete.

### 5600 Control Valve Timer Settings:

(Refer to Figure 2 on P. 5)

Regeneration Frequency controls how often the softener regenerates

1. Locate the Program Wheel on the timer.  
(See Figure 2 on page 5). **NOTE: On 48,000 gr & 64,000 gr softeners, just lift dial and set gallons between regenerations. (Ie: Capacity divided by compensated hardness.**
2. The Program Wheel has a top dial with number of people. Lift this dial and rotate until you align the amount of people in the household with the grains of hardness in the untreated water.  
Ie: Setting the timer for a (4) person household with 20 gpg of hardness in the untreated water. Align the #4 on the people dial with the #20 on the hardness decal.
3. Plug the meter cable, extending from the back of the timer assembly, into the top of the meter housing.

Note: If iron\*, use compensated hardness as calculated below

$$\text{Compensated Hardness (gpg)} = \text{Total Hardness (gpg)} + [3 \times \text{Iron (ppm)}]$$

\*Clear water iron

Please contact the installer for assistance.

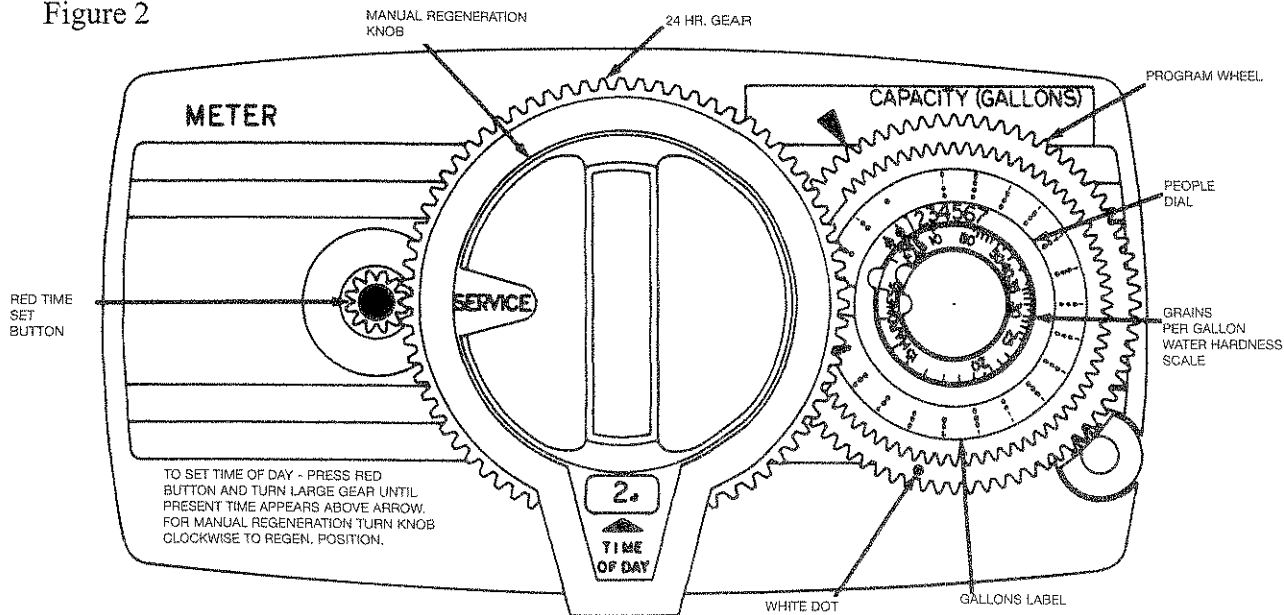
Time of Day should be set for the proper time of day when installing the softener.

1. To set the proper time of day, depress the Red Time Set Button and turn the 24 Hour Gear until the correct time of day is aligned with the Time of Day Arrow.

**Note whether the time is A.M. or P.M.**

2. The timer is preset to regenerate at 2:00 AM.

Figure 2



Cycles

- 1.) Preliminary Rinse (Downflow)
- 2.) Backwash (Upflow)
- 3.) Brine and Slow Rinse (Downflow)
- 4.) Rapid Rinse (Upflow)
- 5.) Settling Rinse (Downflow) and Brine Tank Refill
- 6.) Service (Downflow)

**Final Installation Checklist:**

1. Make sure the drain line connection meets all plumbing codes and that the drain line size can handle the backwash flow rate of the softener.
2. Make sure the Inlet and Outlet ball valves are open and the Bypass ball valve is closed. If using a 5600 brass bypass valve, make sure it's in the service position.
3. Make sure the 5600 control valve timer is plugged into an electrical outlet with power 24 hours per day.
4. Check all piping for leaks.
5. Check timer regeneration frequency and time of day settings.

# MODEL 5600 & 5600 ECONOMINDER®

## service instructions

### A. TO REPLACE TIME BRINE VALVE, INJECTORS, AND SCREEN

1. Unplug electrical cord from outlet.
2. Turn off water supply to conditioner:
  - a. If the conditioner installation has a "three valve" by-pass system, first open the valve in the by-pass line, then close the valves at the conditioner inlet and outlet.
  - b. If the conditioner has an integral by-pass valve, put it in the by-pass position.
  - c. If there is only a shut-off valve near the conditioner inlet, close it.
3. Relieve water pressure in the conditioner by putting the control in the backwash position momentarily. Return the control to the 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.

#### 6A. To replace brine valve.

1. Pull brine valve from injector body, also remove & discard "O" ring at bottom of brine valve hole.
2. Apply silicone lubricant to new "O" ring and reinstall at bottom of brine valve hole.
3. Apply silicone lubricant to "O" ring on new valve assembly and press into brine valve hole, shoulder on bushing should be flush with injector body.

#### 6B. To replace injectors and screen.

1. Remove injector cap and screen, discard "O" ring. Unscrew injector nozzle and throat from injector body.
2. Screw in new injector throat and nozzle, be sure they are seated tightly. Install a new screen.
3. Apply silicone lubricant to new "O" ring and install around oval extension on injector cap.
7. Apply silicone lubricant to three new "O" rings and install over three bosses on injector body.
8. Insert screws with washers thru injector cap and injector. Place this assembly thru hole in timer housing and into mating holes in the valve body. Tighten screws. (Be sure to reinstall brass spacers with injector on model 4600 valve.)
9. Reconnect brine tube and drain line.
10. Return by-pass or inlet valving to normal service position. Water pressure should now be applied to the conditioner, and any by-pass line shut off.
11. Check for leaks at all seal areas. Check drain seal with the control in the backwash position.
12. Plug electrical cord into outlet.
13. Set time of day and cycle the control valve manually to assure proper function. Make sure the control valve is returned to the service position.
14. Make sure there is enough brine in the brine tank.

15. Rotate program wheel counter-clockwise until it stops at regeneration position.
16. Start regeneration cycle manually if water is hard.

### B. TO REPLACE TIMER

1. Unplug electrical cord from outlet.
2. Turn off water supply to conditioner:
  - a. If the conditioner installation has a "three valve" by-pass system, first open the valve in the by-pass line, then close the valves at the conditioner inlet and outlet.
  - b. If the conditioner has an integral by-pass valve, put it in the by-pass position.
  - c. If there is only a shut-off valve near the conditioner inlet, close it.
3. Relieve water pressure in the conditioner by putting the control in the backwash position momentarily. Return the control to the service position.
4. Pull cable out of meter cover. Remove the control valve back cover.
5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly will now lift off easily.
6. Put new timer on top of valve. Be sure drive pin on main gear engages slot in drive yoke (rotate control knob if necessary).
7. Replace timer mounting screws. Replace screw and washer at drive yoke.
8. Return by-pass or inlet valving to normal service position. Water pressure should now be applied to the conditioner, and any by-pass line shut off.
9. Plug electrical cord into outlet.
10. Set time of day, program wheel, and salt usage. Cycle the control valve manually to assure proper function. Make sure the control valve is returned to the 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 counter-clockwise 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.

### C. TO REPLACE PISTON ASSEMBLY

1. Unplug electrical cord from outlet.
2. Turn off water supply to conditioner:
  - a. If the conditioner installation has a "three valve" by-pass system, first open the valve in the by-pass line, then close the valves at the conditioner inlet and outlet.
  - b. If the conditioner has an integral by-pass valve, put it in the by-pass position.
  - c. If there is only a shut-off valve near the conditioner inlet, close it.



# MODEL 5600 & 5600 ECONOMINDER®

## *service instructions*

3. Relieve water pressure in the conditioner by putting the control in the backwash position momentarily. Return the control to the service position.
4. Pull cable out of meter cover. Remove the control valve back cover.
5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly will now lift 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 by-pass or inlet valving to normal service position. Water pressure should now be applied to the conditioner, and any by-pass line shut off.
12. Plug electrical cord into outlet.
13. Set time of day. Cycle the control valve manually to assure proper function. Make sure the control valve is returned to the 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 counter-clockwise 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.

### **D. TO REPLACE SEALS AND SPACERS**

1. Unplug electrical cord from outlet.
2. Turn off water supply to conditioner:
  - a. If the conditioner installation has a "three valve" by-pass system, first open the valve in the by-pass line, then close the valves at the conditioner inlet and outlet.
  - b. If the conditioner has an integral by-pass valve, put it in the by-pass position.
  - c. If there is only a shut-off valve near the conditioner inlet, close it.
3. Relieve water pressure in the conditioner by putting the control in the backwash position momentarily. Return the control to the service position.
4. Pull cable out of meter cover. Remove the control valve back cover.

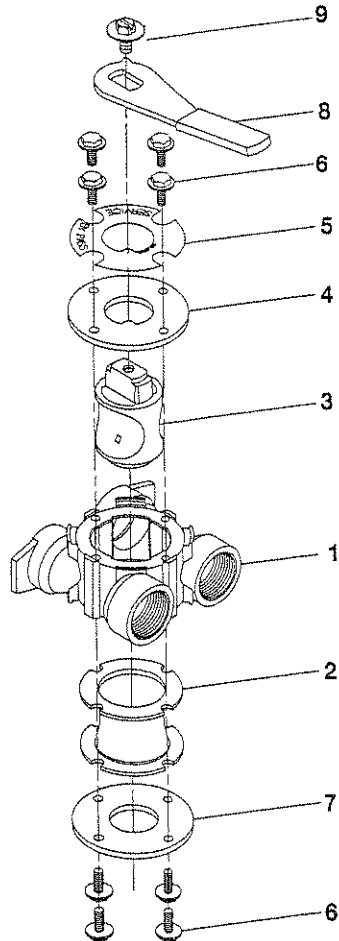
5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly will now lift off easily. Remove end plug retainer plate.
6. Pull upward on end of piston rod yoke until assembly is out of valve. Remove and replace seals and spacers with fingers.

### **E. TO REPLACE METER**

1. Unplug electrical cord from outlet.
2. Turn off water supply to conditioner:
  - a. If the conditioner installation has a "three valve" by-pass system, first open the valve in the by-pass line, then close the valves at the conditioner inlet and outlet.
  - b. If the conditioner has an integral by-pass valve, put it in the by-pass position.
  - c. If there is only a shut-off valve near the conditioner inlet, close it.
3. Relieve water pressure in the conditioner by putting the control in the backwash position momentarily. Return the control to the service position.
4. Pull cable out of meter cover.
5. Remove two screws and clips at by-pass 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 by-pass valve or yoke.
11. Attach two clips and screws at by-pass valve or yoke. Be sure clip legs are firmly engaged with lugs.
12. Return by-pass or inlet valving to normal service position. Water pressure should now be applied to the conditioner, and any by-pass line shut off.
13. Check for leaks at all seal areas.
14. Plug electrical cord into outlet.
15. Set time of day. Make sure the control valve is in the service position.
16. Rotate program wheel counter-clockwise 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.

# MODEL 5600

## *by-pass valve assembly*



### PARTS LIST

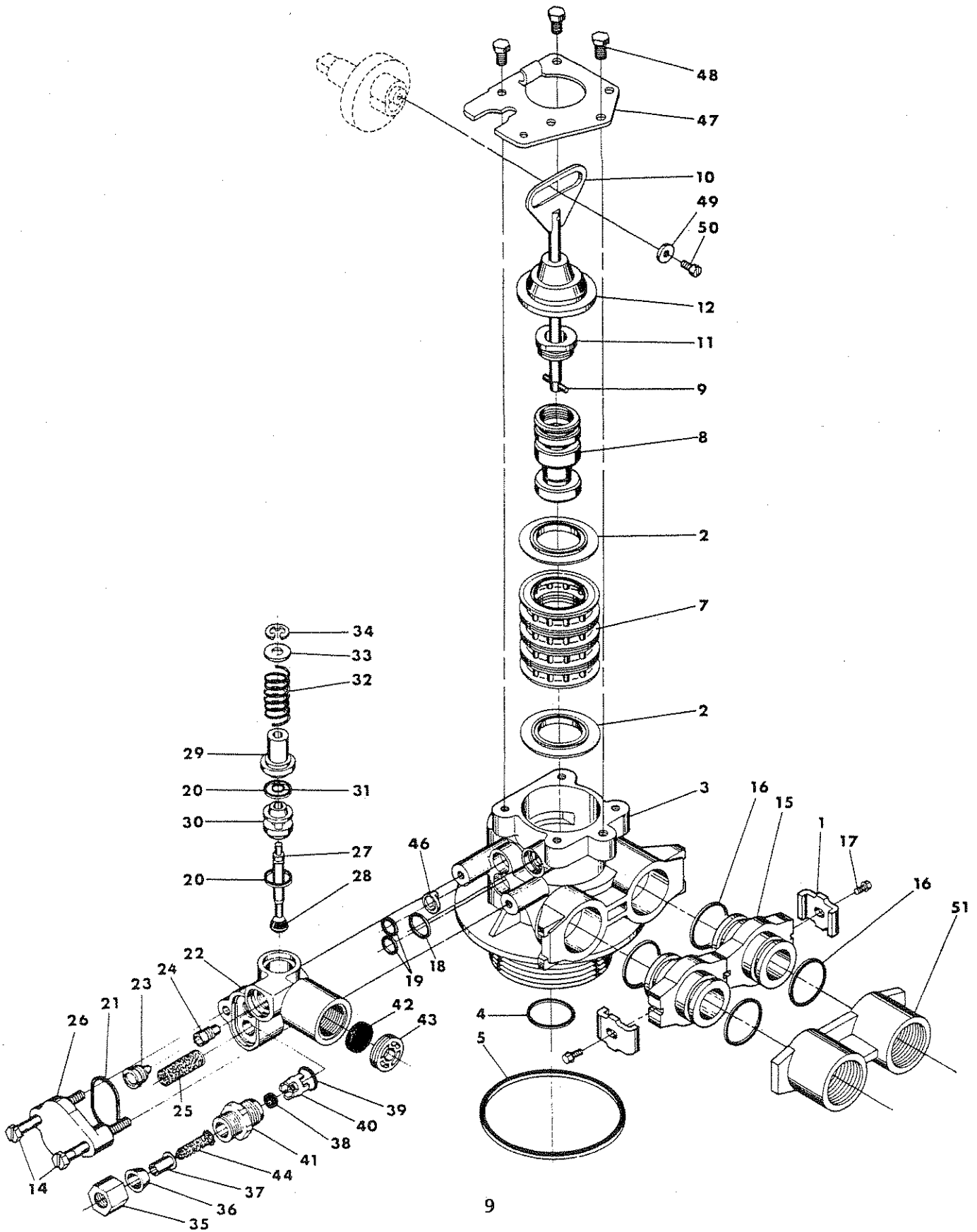
Item No.	Quantity	Part No.	Description
1	1	17290	By-Pass Valve Body, 3/4"
	1	17290NP	By-Pass Valve Body, 3/4" Nickel Plate
	1	13399	By-Pass Valve Body, 1"
	1	13399NP	By-Pass Valve Body, 1", Nickel Plate
2	1	11726	Seal, By-Pass
3	1	11972	Plug, By-Pass
4	1	11978	Side Cover
5	1	13604-01	Label
6	8	15727	Screw
7	1	11986	Side Cover
8	1	11979	Lever, By-Pass
9	1	11989	Screw, Hex Head, 1/4-14

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# MODEL 5600

## control valve assembly

(see opposite page for parts list)



**MODEL 5600  
CONTROL VALVE ASSEMBLY  
PARTS LIST**

ITEM NO.	NO. REQ'D.	PART NO.	DESCRIPTION
1	2	13255	Adapter Clip
2	5	13242	Seal
3	1	14449	Valve Body Assembly - 1" Dist.
	1	14450	Valve Body Assembly - 1 <sup>3</sup> / <sub>16</sub> " Dist.
4	1	13304	"O" Ring - Distributor Tube - 1"
	1	10244	"O" Ring - Distributor Tube - 1 <sup>3</sup> / <sub>16</sub> "
5	1	12281	"O" Ring - Top of Tank
6			Not Assigned
7	4	14241	Spacer
8	1	13247	Piston - Standard
	1	13781	Piston - Low Water
	1	13852	Piston - Filter
9	1	10696	Piston Pin
10	1	13001	Piston Rod Assembly
11	1	12953	Piston Retainer
12	1	13446	End Plug Assembly Std. - White
	1	13446-10	End Plug Assembly Filter - Black
	1	13446-20	End Plug Assembly Low Water - Gray
13			Not Assigned
14	2	13315	Screw - Injector Mounting
15	2	13709	Adapter Coupling
16	4	13305	"O" Ring - Adapter Coupling
17	2	13314	Screw - Adapter Coupling
18	1	12638	"O" Ring - Drain
19	2	13301	"O" Ring - Injector
20	2	13302	"O" Ring - Brine Spacer
21	1	13303	"O" Ring - Injector Cover
22	1	13163	Injector Body
23	1	10913	Injector Nozzle - Specify Size
24	1	10914	Injector Throat - Specify Size
25	1	10227	Injector Screen
26	1	13166	Injector Cover
27	1	13172	Brine Valve Stem
28	1	12626	Brine Valve Seat
29	1	13165	Brine Valve Cap
30	1	13167	Brine Valve Spacer
31	1	12550	Quad Ring
32	1	11973	Spring - Brine Valve
33	1	16098	Washer - Brine Valve
34	1	11981-01	Retaining Ring
35	1	10329	B.L.F.C. Fitting Nut
36	1	10330	B.L.F.C. Ferrule
37	1	10332	B.L.F.C. Tube Insert
38	1	12094	B.L.F.C. Button - .25 GPM
	1	12095	B.L.F.C. Button - .50 GPM
39	1	12977	"O" Ring - B.L.F.C.
40	1	13245	B.L.F.C. Button Retainer
41	1	13244	B.L.F.C. Fitting
42	1		D.L.F.C. Button - Specify Size
43	1	13173	D.L.F.C. Button Retainer
44	1	12767	Screen - Brine Line
45	1	15348	"O" Ring - D.L.F.C. (not shown)
46	1	13497	Air Disperser
47	1	13546	End Plug Retainer
48	3	12112	Screw
49	1	13363	Washer
50	1	13296	Screw
51	1	13708	Adapter - 3/4" N.P.T.
	1	13398	Adapter - 1" N.P.T.

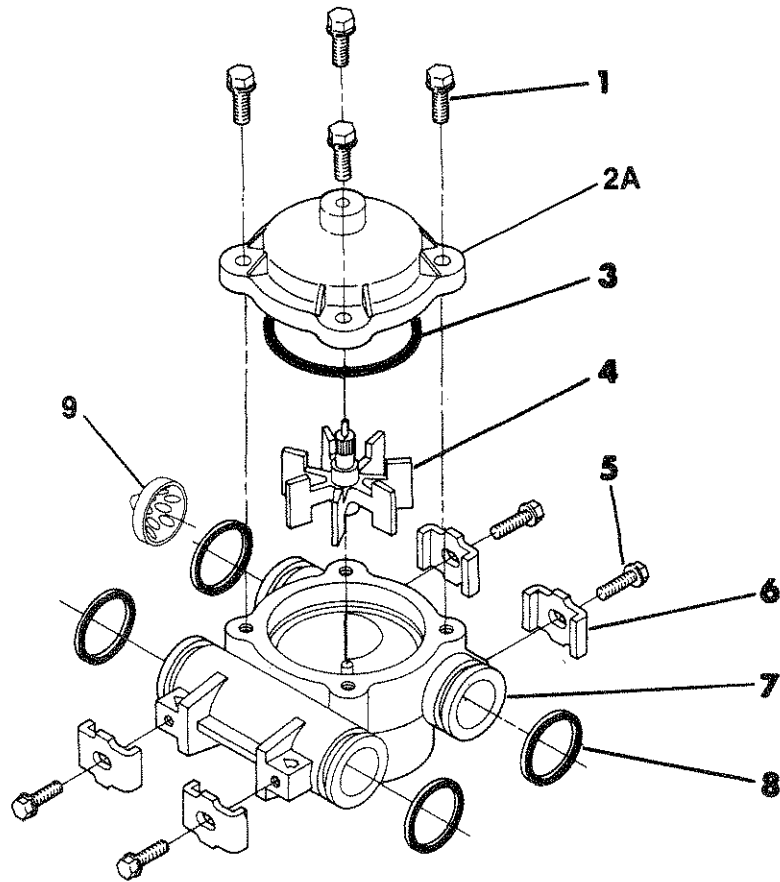


**MODEL 5600 ECONOMINDER  
TIMER - METER INITIATED  
PARTS LIST**

ITEM NO.	NO. REQ'D.	PART NO.	DESCRIPTION
1	1	14448-000	Housing - with Roll Pin
	1	14448-001	Housing - w/Pin Drilled for Screw
	1	14448-0	Housing - w/Pin Drilled for Thumb Screw
1a	1	15494-01	"L" Housing - w/Pin
	1	15494-03	"L" Housing - w/Pin Drilled for Designer
2	1	13175	Motor Mounting Plate
3	1	18743	Motor - 120V., 60 Hz.
	1	13494	Motor - 24V., 60 Hz.
4	3	11384	Screw - Motor Mtg. & Ground Wire
5	5	13296	Screw - Component Mounting
6	1	13017	Idler Gear
7	1	13018	Idler Pinion
8	1	13312	Spring - Idler
9	1	13164	Drive Gear
11	1	13170	Main Gear & Shaft
12	1	19205	24 Hour Gear Assembly, Silver
	1	19205-01	24 Hour Gear Assy, Tan
13	1	13802	Cycle Actuator Gear
14	1	14177	Knob - Manual Regeneration
15	2	13300	Ball - 1/4" Dia.
16	2	14457	Spring - Detent
18	1	13748	Screw - Program Wheel
19	1	60405-15	Program Skipper Wheel Assembly - Specify Hardness Capacity
20	1	13806	Program Wheel Retainer
21	1	13953	Cover Label - Program Wheel
22	1	11842	Electrical Cord
23	2	12681	Wire Connector
24	1	13547	Strain Relief
25	1	13229	Back Cover
26			Not Assigned
27	1	13955	Front Label - Beige
	1	13958	Front Label - Silver
28	1	13310	Rear Label - Softener
	1	18520	Rear Label - Filter
29	1	13957	Tape Stripe - Beige
	1	13960	Tape Stripe - Silver
30	1	60514	Brine Cam Assembly, 3-18
	1	60514-01	Brine Cam Assembly, 6-36
	1	60514-02	Brine Cam Assembly - Minutes
34	2	12473	Screw-Drive Mounting
35	1	12037	Washer
37	1	13830	Drive Pinion - Program Wheel
38	1	13831	Clutch - Drive Pinion
39	1	14253	Spring Retainer
40	1	14276	Spring
41	1	14043	Cable Assembly, Std
	1	14910	Cable Assembly, Ext, Rt Angle
42	1	14176	Valve Position Dial - Standard
	1	14278	Valve Position Dial - Low Water
	1	15478	Valve Position Dial - Filter
43	1	14175	Knob Label - Beige
	1	14207	Knob Label - Silver
44	1	15151	Screw - Knob

# MODEL 5600 ECONOMINDER®

## *meter assembly*



### PARTS LIST

Item No.	No. Required	Part No.	Description
1	4	12473	Screw — Meter Cover Assembly
2	1	14038	Meter Cover Assembly - Standard
	1	15659-90	Meter Cover Assembly - Extended Range, Rt. Angle (Not Shown)
3	1	13847	"O" Ring — Meter Cover Assembly
4	1	13509	Impeller
5	4	13314	Screw — Adapter Clip
6	4	13255	Adapter Clip
7	1	13821	Meter Body
8	4	13305	"O" Ring — Meter Body
9	1	14613	Flow Straightener



## Trouble Shooting

### **Symptom: Unit Fails to Regenerate**

Cause	Solution
Faulty electrical supply	Verify that electrical power is getting to the outlet
Low inlet water pressure	Verify a minimum 20 psi inlet water pressure
Drain line is restricted	Insure that the drain line is free of blockage
Defective timer motor	Replace the timer motor
Plugged backwash flow control	Clean or replace the backwash flow control
Water meter or meter cable is defective	Replace the water meter and/or cable
The injector is plugged	Clean the injector

### **Symptom: Hard Water When Unit is in Service Position**

Cause	Solution
The bypass valve is open or defective	Insure that the bypass valve is in the service position
No salt in the brine tank	Add solar salt to the brine tank
Not enough water in the brine tank	Verify that the 5600 timer is set for the proper amount of salt usage
Unit fails to draw brine (salt water)	See symptom: Unit fails to draw brine
Excessive water usage	Set the timer to regenerate more often
Loss of cation resin	See symptom: Loss of cation resin
Change in raw water hardness level	Test the raw water hardness level and adjust regeneration frequency
Leak at the distributor tube	Verify that the distributor is flush with the top of the tank

### **Symptom: Unit uses too Much Salt**

Cause	Solution
Improper salt usage timer setting	Verify that salt usage setting on the back of the timer is set according to the Specification Reference Table
Excessive water in the brine tank	See symptom: Excessive water in Brine Tank
Water meter or meter cable is defective	Replace the water meter and/or cable

**Symptom: Loss of Cation Resin**

<b>Cause</b>	<b>Solution</b>
Backwash flow control is missing or is the incorrect size	Verify that the proper backwash flow control is installed
Air in the system	Verify that the well system is operating properly

**Symptom: Excessive Water in the Brine Tank**

<b>Cause</b>	<b>Solution</b>
Injector is plugged	Clean or replace the injector
Defective or damaged piston/spacers assembly	Replace the piston/spacers assembly
The brine float assembly seals on the 464 brine tank shutoff are dirty or worn	Replace the 464 brine float assembly
Salt setting at the back of the timer assembly is set incorrectly	Verify that the salt setting on the timer assembly corresponds with the reference table
Drain line is restricted	Insure that there are no restrictions in the drain line piping
Plugged backwash control	Clean the backwash flow control (BWFC)

**Symptom: Unit Fails to Draw Brine**

<b>Cause</b>	<b>Solution</b>
Injector is plugged	Clean or replace the injector
Loose suction line connection	Verify that all suction line connections are tight
Drain line is restricted	Insure that there are no restrictions in the drain line piping
Low inlet water pressure	Verify a minimum 20 psi inlet water pressure
Improper installation of distributor pipe	Verify that the distributor is flush with the top of the tank

**Symptom: Continuous Flow to Drain**

<b>Cause</b>	<b>Solution</b>
Defective or damaged piston/spacers assembly	Replace the piston/spacers assembly
Piston rod assembly is damaged	Replace piston rod assembly
Drive motor failure	Replace the drive motor

**Symptom: Loss of Water Pressure**

<b>Cause</b>	<b>Solution</b>
Dirt build-up in softener tank	Clean or replace the Cation Resin
Dirt build-up in the inlet piping to the Water Softener Unit	Clean or replace the inlet piping
Distributor pipe is plugged	Clean or replace the distributor pipe

**Symptom: Control Valve Cycles Continuously**

<b>Cause</b>	<b>Solution</b>
Defective timer assembly	Replace the timer assembly

