



*Water Specialists*

*E606 GOLD*

*Softener Operation Manual*

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**Note:**

1. Read all instructions carefully before operation.
2. Avoid pinched o-rings during installation by applying (provided with install kit) NSF certified lubricant to all seals.

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# Water Softener Gallon Setting Chart

| Water Softener Gallon Setting Chart   |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
|---|------|------|------|------|------|------|------|------|--|--|------|------|--|-----|-----|--|--|--|
| Instructions: First select the chart for your model of water softener, then simply line up the number of people living in the home with the hardness of the water and select the appropriate gallon setting for your model. |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| at 6lbs salt/CF   |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| .75 CF  |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| Total Hardness in Grains per US Gallon  |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
|   |      | 10   | 15   | 20   | 25   | 30   | 35   | 40   | 45   | 50   |      |      |  |     |     |  |  |  |
|   | 1    | 1575 | 1025 | 750  | 585  | 475  | 396  | 338  | 292  | 255  |      |      |  |     |     |  |  |  |
| Number of people living in the home   | 2    | 1500 | 950  | 675  | 510  | 400  | 321  | 263  | 217  | Softener could be undersized if # of people and hardness line up in this shaded area. Consideration may be given to a larger size unit to meet your needs. |      |      |  |     |     |  |  |  |
|   | 3    | 1425 | 875  | 600  | 435  | 325  |      |      |  |  |      |      |  |     |     |  |  |  |
|   | 4    | 1350 | 800  | 525  |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
|   | 5    | 1275 | 725  |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
|   | 6    | 1200 |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
|   | 7    | 1125 |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 8   | 1050 |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 1.0 CF  |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| Total Hardness in Grains per US Gallon  |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
|   |      | 10   | 15   | 20   | 25   | 30   | 35   | 40   | 45   | 50   | 55   | 60   | 65   |     |     |  |  |  |
|   | 1    | 2125 | 1392 | 1025 | 805  | 658  | 554  | 475  | 414  | 365  | 325  | 292  | 263  |     |     |  |  |  |
| Number of people living in the home   | 2    | 2050 | 1317 | 950  | 730  | 583  | 479  | 400  | 339  | 290  | 250  | 217  |  |     |     |  |  |  |
|   | 3    | 1975 | 1242 | 875  | 655  | 508  | 404  | 325  | Softener could be undersized if # of people and hardness line up in this shaded area. Consideration may be given to a larger size unit to meet your needs. |  |      |      |  |     |     |  |  |  |
|   | 4    | 1900 | 1167 | 800  | 580  | 433  |      |      |  |  |      |      |  |     |     |  |  |  |
|   | 5    | 1825 | 1092 | 725  |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
|   | 6    | 1750 | 1017 |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
|   | 7    | 1675 | 942  |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 8   | 1600 | 867  |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 9   | 1525 |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 10  | 1450 |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 1.5 CF  |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| Total Hardness in Grains per US Gallon  |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
|   |      | 10   | 15   | 20   | 25   | 30   | 35   | 40   | 45   | 50   | 55   | 60   | 65   | 70  | 75  |  |  |  |
|   | 1    | 3225 | 2125 | 1575 | 1245 | 1025 | 868  | 750  | 658  | 585  | 525  | 475  | 433  | 396 | 365 |  |  |  |
| Number of people living in the home   | 2    | 3150 | 2050 | 1500 | 1170 | 950  | 793  | 675  | 583  | 510  | 450  | 400  | 358  | 321 | 290 |  |  |  |
|   | 3    | 3075 | 1975 | 1425 | 1095 | 875  | 718  | 600  | 508  | 435  | 375  | 325  | Softener could be undersized if # of people and hardness line up in this shaded area. Consideration may be given to a larger size unit to meet your needs. |     |     |  |  |  |
|   | 4    | 3000 | 1900 | 1350 | 1020 | 800  | 643  | 525  | 433  |  |      |      |  |     |     |  |  |  |
|   | 5    | 2925 | 1825 | 1275 | 945  | 725  | 568  |      |  |  |      |      |  |     |     |  |  |  |
|   | 6    | 2850 | 1750 | 1200 | 870  | 650  |      |      |  |  |      |      |  |     |     |  |  |  |
|   | 7    | 2775 | 1675 | 1125 | 795  |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 8   | 2700 | 1600 | 1050 |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 9   | 2625 | 1525 | 975  |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 10  | 2550 | 1450 |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 2.0 CF  |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| Total Hardness in Grains per US Gallon  |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
|   |      | 10   | 15   | 20   | 25   | 30   | 35   | 40   | 45   | 50   | 55   | 60   | 65   | 70  | 75  |  |  |  |
|   | 1    | 4325 | 2858 | 2125 | 1685 | 1392 | 1182 | 1025 | 903  | 805  | 725  | 658  | 602  | 554 | 512 |  |  |  |
| Number of people living in the home   | 2    | 4250 | 2783 | 2050 | 1610 | 1317 | 1107 | 950  | 828  | 730  | 650  | 583  | 527  | 479 | 437 |  |  |  |
|   | 3    | 4175 | 2708 | 1975 | 1535 | 1242 | 1032 | 875  | 753  | 655  | 575  | 508  | 452  | 404 | 362 |  |  |  |
|   | 4    | 4100 | 2633 | 1900 | 1460 | 1167 | 957  | 800  | 678  | 580  | 500  | 433  | Softener could be undersized if # of people and hardness line up in this shaded area. Consideration may be given to a larger size unit to meet your needs. |     |     |  |  |  |
|   | 5    | 4025 | 2558 | 1825 | 1385 | 1092 | 882  | 725  | 603  |  |      |      |  |     |     |  |  |  |
|   | 6    | 3950 | 2483 | 1750 | 1310 | 1017 | 807  |      |  |  |      |      |  |     |     |  |  |  |
|   | 7    | 3875 | 2408 | 1675 | 1235 | 942  |      |      |  |  |      |      |  |     |     |  |  |  |
| 8   | 3800 | 2333 | 1600 | 1160 | 867  |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 9   | 3725 | 2258 | 1525 | 1085 |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 10  | 3650 | 2183 | 1450 |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 3.0 CF  |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| Total Hardness in Grains per US Gallon  |      |      |      |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
|   |      | 10   | 15   | 20   | 25   | 30   | 35   | 40   | 45   | 50   | 55   | 60   | 65   | 70  | 75  |  |  |  |
|   | 1    | 6525 | 4325 | 3225 | 2565 | 2125 | 1811 | 1575 | 1392   | 1245   | 1125 | 1025 | 940  | 868 | 805 |  |  |  |
| Number of people living in the home   | 2    | 6450 | 4250 | 3150 | 2490 | 2050 | 1736 | 1500 | 1317   | 1170   | 1050 | 950  | 865  | 793 | 730 |  |  |  |
|   | 3    | 6375 | 4175 | 3075 | 2415 | 1975 | 1661 | 1425 | 1242   | 1095   | 975  | 875  | 790  | 718 | 655 |  |  |  |
|   | 4    | 6300 | 4100 | 3000 | 2340 | 1900 | 1586 | 1350 | 1167   | 1020   | 900  | 800  | Softener could be undersized if # of people and hardness line up in this shaded area. Consideration may be given to a larger size unit to meet your needs. |     |     |  |  |  |
|   | 5    | 6225 | 4025 | 2925 | 2265 | 1825 | 1511 | 1275 | 1092   |  |      |      |  |     |     |  |  |  |
|   | 6    | 6150 | 3950 | 2850 | 2190 | 1750 | 1436 | 1200 |  |  |      |      |  |     |     |  |  |  |
|   | 7    | 6075 | 3875 | 2775 | 2115 | 1675 | 1361 | 1125 |  |  |      |      |  |     |     |  |  |  |
| 8   | 6000 | 3800 | 2700 | 2040 | 1600 |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 9   | 5925 | 3725 | 2625 | 1965 |      |      |      |      |  |  |      |      |  |     |     |  |  |  |
| 10  | 5850 | 3650 | 2550 |      |      |      |      |      |  |  |      |      |  |     |     |  |  |  |

Figure 1. Gallon Setting Chart

## System Specifications

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Figure 2. Specifications

- Maximum Water Temperature = 110°F (43°C)
- Maximum Operating Pressure = 100 PSIG (689 kPa)
- Voltage = 110 volts standard
- Pipe Size = 3/4"
- At the stated service flow rates, the pressure drop through these devices will not exceed 15 psig.
- Changing salt settings from factory setting may require changing injector sizes to achieve stated capacities.
- The manufacturer reserves the right to make product improvements which may deviate from the specifications and descriptions stated herein, without obligation to change previously manufactured products or to note the change.

## How Your Water Conditioner Works

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The principle behind water softening is simple chemistry. A water softener contains resin beads which hold electrically charged ions. When hard water passes through the softener, calcium and magnesium ions are attracted to the charged resin beads. It's the resulting removal of calcium and magnesium ions that produces soft water.

This system is controlled with simple, user-friendly electronics displayed on a LCD screen. The main page displays the current time and the remaining gallons in meter mode or the remaining days in calendar clock mode.

Figure 3. Valve Display

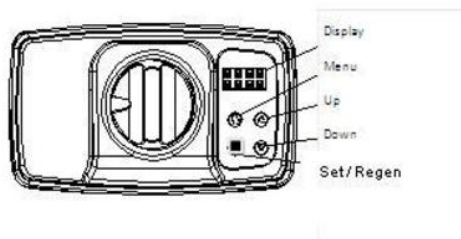


Figure 3. Valve Display

### System Initialization

When power is supplied to the control, the screen will display TIME OF DAY AND DEFAULT GALLON SETTING.

## Programming

1. Press '□' to enter programming. If the system has been inactive, you may have to hold and press '□' until you hear a beep to unlock the display screen. Press '▲' or '▼' to select which setting to modify.
2. To change setting, press '■'. When the display flashes, the value may be changed. Press '▲' or '▼' to change the value. Press '■' to accept the value.
3. Press '□' to return to previous menu.

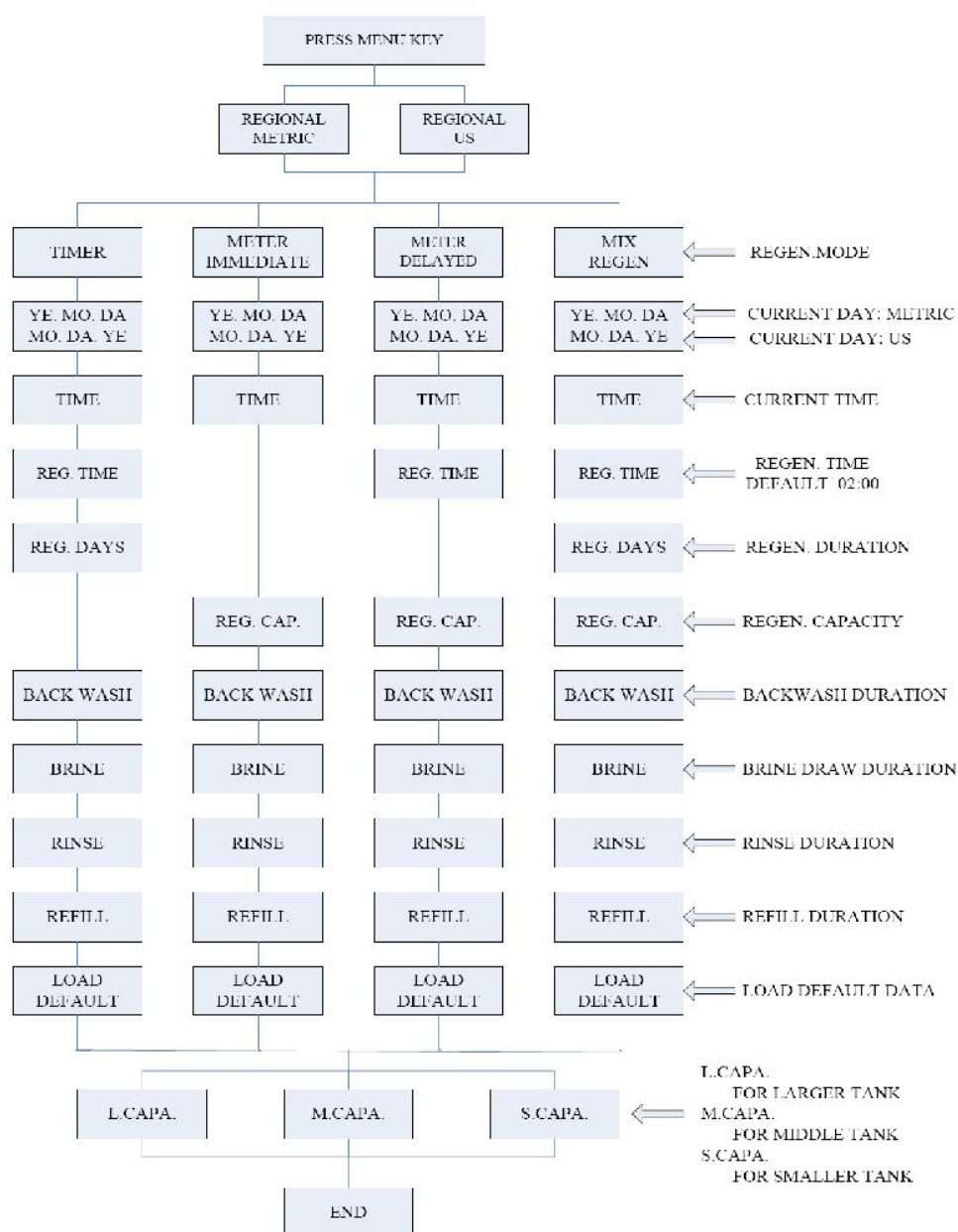


Figure4. Program Flow Chart


## Program Options

Depending on the current option settings, some parameters cannot be viewed or set.

| Program Mode |                   |                 |   |
|--------------|-------------------|-----------------|---|
| PARAMETER    |                   | OPTIONS         | DESCRIPTION   |
| 1            | REGIONAL          | METRIC          | This option controls whether cubic meters or US gallons is used for the volume display and the format of the day, year, and month.  |
|              |                   | US              |   |
| 2            | REGENERATION MODE | METER DELAYED   | This is the most common setting. When the volume remaining reaches zero gallons, the system will initiate a regeneration at the next pre-set regeneration time.   |
|              |                   | METER IMMEDIATE | The unit will initiate a regeneration immediately after the volume remaining reaches zero.  |
|              |                   | TIMER           | The unit will initiate a regeneration at the next pre-set regeneration time based on the interval of days between regeneration days.  |
|              |                   | MIX REGEN       | <b>Meter initiated with Day Override.</b> When the volume remaining reaches zero gallons, the system will initiate a regeneration at the next pre-set regeneration time. If the days between regeneration is reached before the remaining volume reaches zero, the system will override the meter setting and initiate a regeneration.                              |
| 4            | DATE              |                 | Set date of installation. This value is fixed and does not change.  |
| 5            | TIME              |                 | Set current time.   |
| 6            | REG TIME          |                 | This setting controls the time of day when a regeneration cycle will start.   |
| 7            | REG. DAYS         |                 | The user can manually enter values for regeneration day intervals.  |
| 8            | REG. CAP.         |                 | The user can manually enter values system capacity.   |
| 9            | BACKWASH          |                 | This option controls the length of time in minutes for the unit to clean the bed by reversing the flow of water upwards through the bed and out to the drain.   |
| 10           | BRINE             |                 | This option controls the length if time in minutes for the unit to draw regenerant (brine for softeners) from the second tank and slowly rinse it from the top to bottom of the tank.   |
| 11           | RINSE             |                 | This option controls the length of time to give the tank a final rinse from the top to the bottom in order remove any last traces of the regenerant (brine) from the tank.  |
| 12           | REFILL            |                 | This option controls the length of time the brine valve will open to refill the second tank (brine tank for softeners) with water in order to produce the regenerate solution (brine for softeners) for the next regeneration cycle. The water is accurately measured through the valves brine line flow control to make a precise quantity of regenerant solution. |
| 13           | LOAD DEFAULT      | LCAPA.          | <b>It is not recommended to use any of these options.</b> The function of this option is to load pre-set values of BACKWASH, BRINE, RINSE, and REFILL for large, medium, and small capacity systems. <b>We recommend to use the settings as specified in the SYSTEM CONFIGURATION section of this manual.</b>   |
|              |                   | M.CAPA          |   |
|              |                   | S.CAPA          |   |

Figure 5. Program Options

## Manual Regeneration (Delayed or Immediate)


If screen is locked, press “ MENU” for 3 seconds to unlock. To initiate an immediate regeneration, press the SET / REGEN button for 3 seconds, an option for delayed or immediate regeneration will appear. Press the SET / REGEN button again and delayed will begin flashing, press the down arrow button to have immediate flash, press the SET / REGEN button and then press the menu button and the valve will immediately start into manual regeneration.

To initiate a delayed regeneration, press the SET / REGEN button for 3 seconds, then press the menu button and a regeneration will be queued to the next pre-set regeneration time (2:00 a.m.).



# General System Installation

|                   |   |
|-------------------|---|
| Water Pressure    | Minimum 25 PSI  |
| Electrical Supply | Uninterrupted 115V AC   |
| Existing Plumbing | Free of any deposits or build-ups inside pipes.   |
| Softener Location | Locate close to drain and connect according to plumbing codes                               |
| Bypass Valves     | Always provide for bypass valve if unit is not equipped with one.                           |
| Plumbing          | Softener and or other water treatment equipment should be installed to local plumbing codes |

|   |   |
|---|---|
|  | <b>CAUTION</b> <ul style="list-style-type: none"><li>▪ Do not exceed 120 psi water pressure.</li><li>▪ Do not exceed 110°F water temperature.</li><li>▪ Do not subject unit to freezing conditions.</li></ul> |
|---|---|

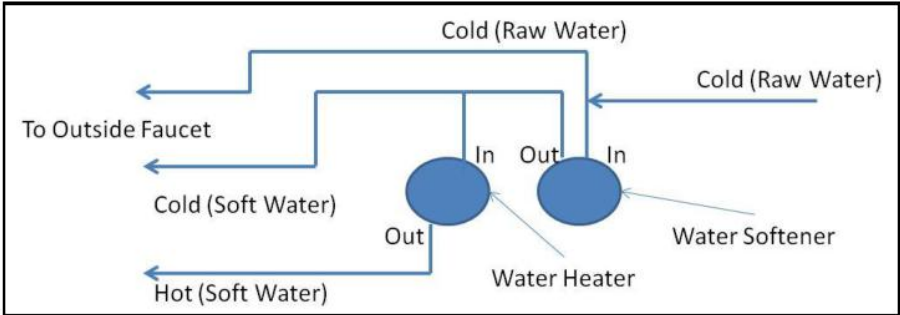


Figure 6. Piping Diagram

## Installing the Bypass valve

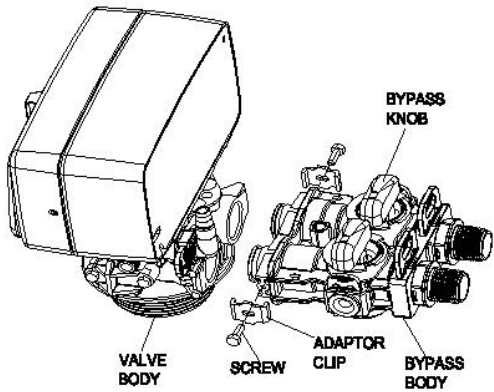


Figure 7. Bypass Assembly View

1. Locate the softener tank and brine tank close to a drain where the system will be installed. The surface should be clean and level.
2. Perform all plumbing according to local plumbing codes.
  - Use a ½" minimum pipe or tubing size for the drain line
  - Use a ¾" pipe or tubing for backwash flow rates that exceed 7 gpm or length that exceeds 20ft (6 m)
  - **ON COPPER PLUMBING SYSTEMS BE SURE TO INSTALL A GROUNDING WIRE BETWEEN THE INLET AND OUTLET PIPING TO MAINTAIN GROUNDING.**

- Any solder joints near the valve must be done before connecting any piping to the valve. Always leave at least 6" (152 mm) between the valve and joints when soldering pipes that are connected to the valve. Failure to do this could cause damage to the valve.
- If the valve is not installed on the tank, cut the 1" central pipe flush with top of each tank. Lubricate the large o-ring on the valve that seals against the tank. Screw the valve on to the tank. Be careful to not cross thread the valve into the tank. Only use silicone lubricant.
- Connect the drain line to the valve.
- Connect the brine line from the valve to the air check / safety elbow as per figure 8. Double check to make sure all connections are assembled correctly and the brass and plastic nuts are tight and secure to prevent leaks.
- Add water until there is approximately 1" (25 mm) of water above the grid plate. If the tank does not have a grid, add water until it is above the air check in the brine tank. Do not add salt to the brine tank at this time.
- Place the unit in the bypass position.
- Slowly turn on the main water supply.
- At the nearest cold treated water tap nearby remove the faucet screen, open the faucet and let water run a few minutes or until the system is free of any air or foreign material resulting from the plumbing work. Close the water tap when water runs clean, then proceed to start up instructions.

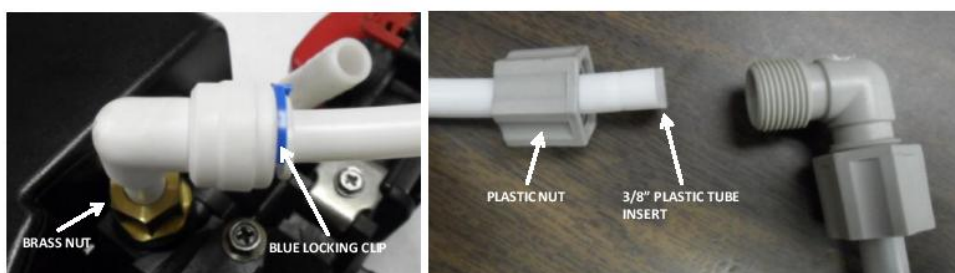


Figure 8. Brine Line Connections View

### **Start up Procedure**

- Plug the valve into an approved power source.
- When power is supplied to the control, the screen will display TIME OF DAY and DEFAULT GALLON SETTING. If the valve is not
- If the system has been inactive, you may have to hold and press '⏏' until you hear a beep to unlock the display screen. Press "■" to initiate a manual regeneration and advance the valve to the Backwash position. Open the inlet on the bypass valve slowly and allow water to enter the unit. Allow all air to escape from the unit before turning the water on fully then allow water to run to drain for 3-4 minutes or until all media fines are washed out of the softener or filter.
- Press the "■" to advance to the BRINE position. Check the water level in the brine tank to insure the valve is drawing brine properly.
- Press the "■" to advance to the RINSE position. Check the drain line flow. Allow the water to run for 3-4 minutes or until the water is clear.
- Press the "■" to advance to the REFILL position. Check that the valve is filling water into the brine tank. Allow the valve to refill for the correct amount of time as displayed on the screen to insure a proper brine solution for the next regeneration.
- Press the "■" to advance to the SERVICE position. Open the outlet valve to the bypass, then open the nearest treated water faucet and allow the water to run until clear, close the tap and replace the faucet screen.
- Put salt into the brine tank.

### **Control Operation During A Power Failure**

In the event of power failure, the valve will keep track of the time and day for 48 hours. The programmed settings are stored in a non-volatile memory and will not be lost during a power failure. If power fails while the unit is in regeneration, the valve will return to the service position once power is restored. If the valve misses a scheduled regeneration due to a power failure, it will queue a regeneration at the next regeneration time once power is restored.



## System Configuration

| RESIN VOLUME | SYSTEM CAPACITY (GRAINS) |                |                                    |               | CYCLE TIME (MINUTES) |             |       | REFILL TIME (MINUTES) @ 0.70 GPM BLFC |                |                                    |               |
|--------------|--------------------------|----------------|------------------------------------|---------------|----------------------|-------------|-------|---------------------------------------|----------------|------------------------------------|---------------|
|              | @ 15 lbs/cu ft           | @ 10 lbs/cu ft | @ 6 lbs/cu ft<br>(Factory Setting) | @ 3 lbs/cu ft | BACKWASH             | BRINE/RINSE | RINSE | @ 15 lbs/cu ft                        | @ 10 lbs/cu ft | @ 6 lbs/cu ft<br>(Factory Setting) | @ 3 lbs/cu ft |
| 0.75         | 22,500                   | 19,875         | 16,500                             | 10,500        | 10.0                 | 60.0        | 10.0  | 6.0                                   | 4.0            | 2.0                                | 1.1           |
| 1.00         | 30,000                   | 26,500         | 22,000                             | 14,000        | 10.0                 | 60.0        | 10.0  | 7.0                                   | 5.0            | 3.0                                | 1.5           |
| 1.50         | 45,000                   | 39,750         | 33,000                             | 21,000        | 10.0                 | 60.0        | 10.0  | 11.0                                  | 7.0            | 5.0                                | 2.0           |
| 2.00         | 60,000                   | 53,000         | 44,000                             | 28,000        | 10.0                 | 60.0        | 10.0  | 14.0                                  | 10.0           | 6.0                                | 3.0           |
| 3.00         | 90,000                   | 79,500         | 66,000                             | 42,000        | 10.0                 | 60.0        | 10.0  | 21.0                                  | 14.0           | 9.0                                | 4.3           |

Figure 9. Valve Cycle Settings

### Injector and Drain Line Flow Control

| Suggested Softener Valve Configuration |              |                                |                                |
|--|--------------|--------------------------------|--------------------------------|
| Tank Size (Diameter)                   | Injector Set | Brine Line Flow Control (BLFC) | Drain Line Flow Control (DLFC) |
| 6"                                     | #000 Brown   | (0.70 GPM)                     | #1 (1.5 GPM)                   |
| 7"                                     |              |                                |                                |
| 8"                                     |              |                                |                                |
| 9"                                     | #1 White     |                                | #2 (2.0 GPM)                   |
| 10"                                    |              |                                | #3 (2.4 GPM)                   |
| 12"                                    |              |                                | #4 (3.5 GPM)                   |
| 13"                                    | #2 Blue      |                                | #6 (4.0 GPM)                   |
| 14"                                    |              |                                | #7 (5.0 GPM)                   |
| 16"                                    | #3 Yellow    |                                | none                           |

Figure 10. Valve Configurations

### Automatic Bypass

The regeneration cycle lasts approximately 75 minutes, after which soft water service will be restored. During regeneration, hard water is automatically bypassed for use in the household. Hot water should be used as little as possible during this time to prevent hard water from filling the water heater. This is why automatic regeneration is set for sometime during the night and manual regenerations should be performed when little or no water will be used in the household.

### Safety Float

The brine tank is equipped with a safety float which prevents your brine tank from overflowing as a result of a malfunction such as a power failure.

### New Sounds

You may notice new sounds as your water softener operates. The regeneration cycle lasts approximately 2-1/2 hours. During this time, you may hear water running intermittently to the drain.

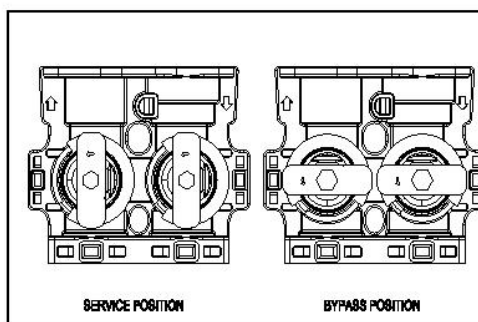


Figure 11. Bypass Installation View

### Manual Bypass

In the case of emergency, such as an overflowing brine tank, you can isolate your water softener from the water supply using the bypass valve located at the back of the control. In normal operation the bypass is open with the on/off knobs in line with the inlet and outlet pipes. To isolate the softener, simply rotate the knobs counter clockwise until they lock. You can use your water related fixtures and appliances as the water supply is bypassing the softener. However, the water you use will be hard. To resume soft water service, open bypass valve by rotating the knobs clockwise.

## Maintenance

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### Adding Salt

Use only crystal water softener salt. Check the salt level monthly. It is important to maintain the salt level above the water level. To add salt, simply lift the salt lid and add the salt directly into the brine tank. Be sure the brine well cover is on and fill only to the height of the brine well.

### Bridging

Humidity or wrong type of salt may create a cavity between the water and the salt. This action, known as “bridging”, prevents the brine solution from being made, leading to your water supply being hard. If you suspect salt bridging, carefully pound on the outside of the brine tank or pour some warm water over the salt to break up the bridge. This should always be followed up by allowing the unit to use up any remaining salt and then thoroughly cleaning out the brine tank. Allow four hours to produce a brine solution, and then manually regenerate the softener.

### Care of Your Softener

To retain the attractive appearance of your new water softener, clean occasionally with mild soap solution. Do not use abrasive cleaners, ammonia or solvents. Never subject your softener to freezing or to temperatures above 120°F.

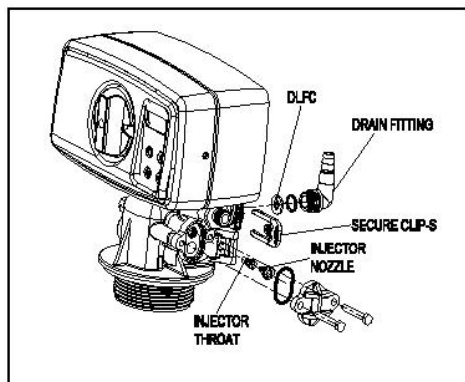


Figure 12. Injector Assembly

### Cleaning the Injector Assembly

Sediment, salt and silt will restrict or clog the injector. A clean water supply and pure salt will prevent this from happening.

The injector assembly is located on the right side of the control valve. This assembly is easy to clean.

Shut off the water supply to your softener and reduce the pressure by opening a cold soft water faucet. Using a screwdriver, remove the two screws holding the injector cover to the control valve body. Carefully remove the assembly and disassemble as shown in Figure 6. The injector orifice is removed from the valve body by carefully turning it out with a large screwdriver. Remove the injector throat the same way. Carefully flush all parts including the screen. Use a mild acid such as vinegar or Pro-Rust Out to clean the small holes in the orifice and throat.

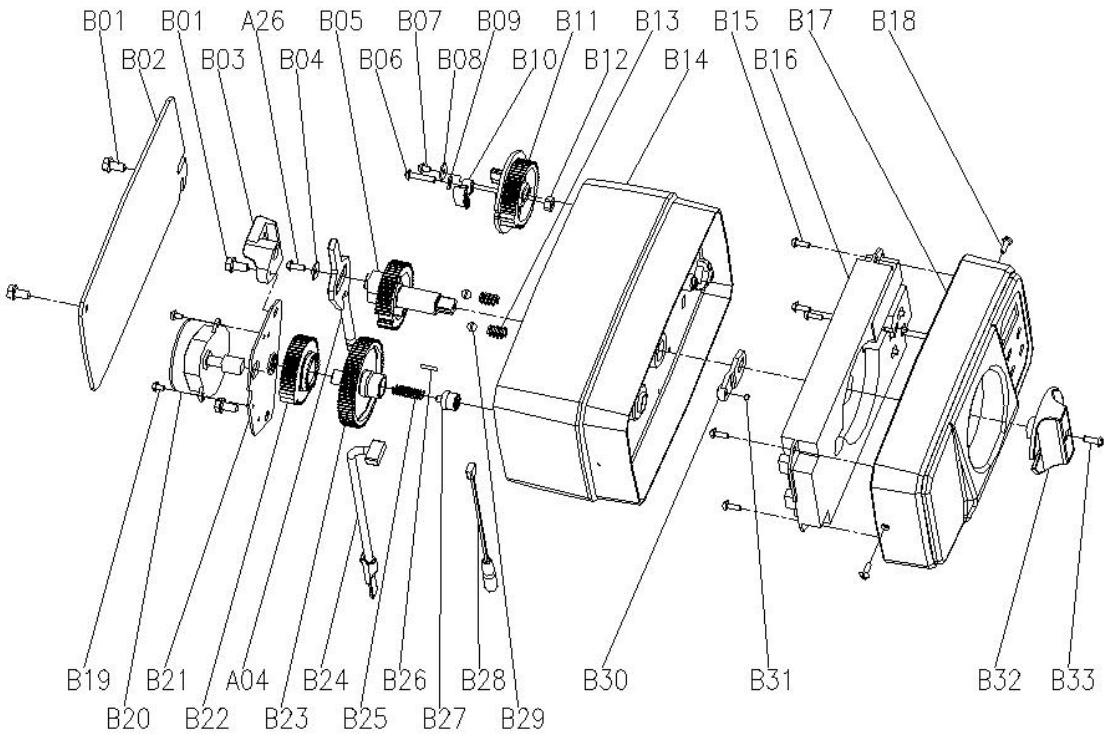
Re-assemble using the reverse procedure.

### Resin Cleaner

An approved resin cleaner **must** be used on a regular basis if your water supply contains iron. The amount of resin cleaner and frequency of use is determined by the quantity of iron in your water (consult your local representative or follow the directions on the resin package).

**Power Head Exploded View**

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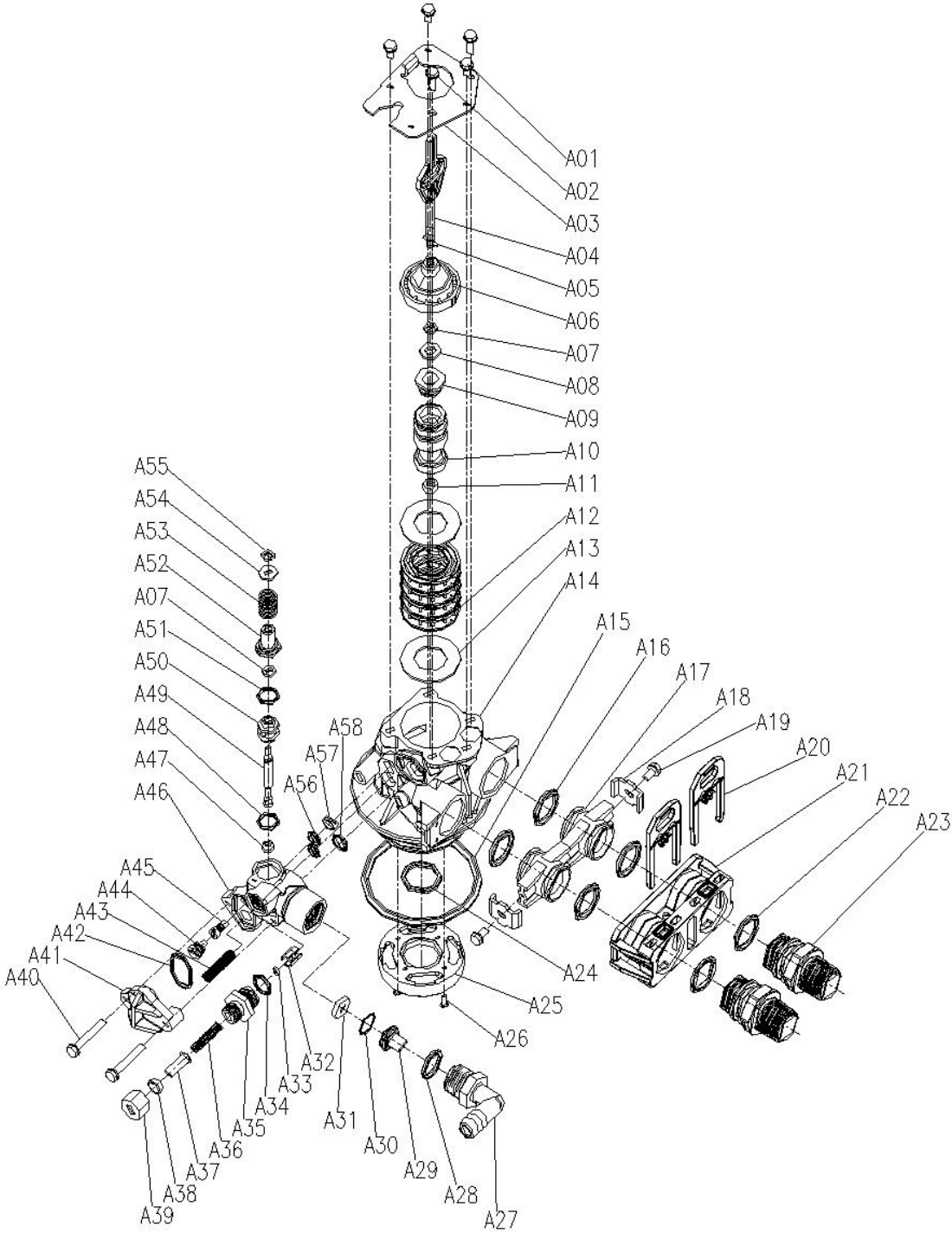
See parts listing on next page (12)

## Power Head Parts List

| Item No. | Part No. | Part Description                    | Quantity |
|----------|----------|-------------------------------------|----------|
| B01      | 5056136  | Screw-ST3.5×13(Hexagon with Washer) | 4        |
| B02      | 5056014  | Bnt65 Back Cover                    | 1        |
| B03      | 5010045  | Piston Stem Holder                  | 1        |
| A26      | 13000426 | Screw-ST2.9×13(Large Wafer)         | 1        |
| B04      | 5056139  | Washer-3x13                         | 1        |
| B05      | 5056005  | Main Gear                           | 1        |
| B06      | 5056083  | Screw-M4x14                         | 1        |
| B07      | 5056166  | Screw-ST4.2×12(Large Wafer)         | 1        |
| B08      | 5056141  | Washer-4x12                         | 1        |
| B09      | 13111004 | Washer-4x9                          | 1        |
| B10      | 5056016  | Refill Regulator                    | 1        |
| B11      | 5056015  | Brine Gear                          | 1        |
| B12      | 5056089  | Nut-M4                              | 1        |
| B13      | 5056095  | Spring Detent                       | 2        |
| B14      | 5056001  | Bnt65 Housing                       | 1        |
| B15      | 5010037  | Screw-ST2.9×10                      | 5        |
| B16      | 5056504  | Bnt165 Pcb                          | 1        |
| B17      | 5056500  | Bnt165 Front Cover                  | 1        |
|          | 5056505  | Bnt165 Operation Label              | 1        |
|          | 5056506  | Bnt165 Regen. Label                 | 1        |
| B18      | 5056509  | Screw-ST2.9×10(CSK )                | 2        |
| B19      | 5056082  | Screw-M3×5                          | 2        |
| B20      | 5056510  | Motor-12v/2rpm                      | 1        |
|          | 11700005 | Wire Connector                      | 2        |
| B21      | 5056045  | Motor Mounting Plate                | 1        |
| B22      | 5056501  | Bnt165 Drive Gear                   | 1        |
| A04      | 5010081  | Bnt65 Piston Rod                    | 1        |
| B23      | 5056002  | Idler Gear                          | 1        |
| B24      | 5010031  | Meter Assembly                      | 1        |
|          | 5010046  | Meter Strain Relief                 | 1        |
| B25      | 5056094  | Spring Idler                        | 1        |
| B26      | 5056098  | Motor Pin                           | 1        |
| B27      | 5056502  | Spring Retainer                     | 1        |
| B28      | 5056507  | Bnt165 Power Cable                  | 1        |
|          | 5056013  | Bnt65 Power Strain Relief           | 1        |
| B29      | 5056092  | Ball-1/4inch                        | 2        |
| B30      | 5056503  | Magnet Holder                       | 1        |
| B31      | 5010023  | Magnet-φ3×2.7                       | 1        |
| B32      | 5056008  | Bnt65 Knob                          | 1        |
|          | 5056111  | Bnt65 Knob Label                    | 1        |
| B33      | 5056084  | Screw-ST3.5x13                      | 1        |



Control Valve Exploded View



See parts listing on next page (14)



## Control Valve Parts List

| Item No. | Part No.  | Part Description                    | Quantity |
|----------|-----------|-------------------------------------|----------|
| A01      | 05056087  | Screw-M5×12(Hexagon)                | 3        |
| A02      | 05056088  | Screw-M5×16(Hexagon with Washer)    | 2        |
| A03      | 05056047  | End Plug Retainer                   | 1        |
| A04      | 05010081  | Brk65 Piston Rod                    | 1        |
| A05      | 05056097  | Piston Pin                          | 1        |
| A06      | 05056023  | End Plug                            | 1        |
| A07      | 05056070  | Quad Ring                           | 2        |
| A08      | 05056024  | End Plug Washer                     | 1        |
| A09      | 05056022  | Piston Retainer                     | 1        |
| A10      | 05056181  | Piston (Electric)                   | 1        |
| A11      | 05056104  | Muffler                             | 1        |
| A12      | 05056021  | Spacer                              | 4        |
| A13      | 05056073  | Seal                                | 5        |
| A14      | 05056019  | Brk65 Valve Body                    | 1        |
| A15      | 05056063  | O-ring-φ8.74×6.33                   | 1        |
| A16      | 05056129  | O-ring-φ23×3                        | 4        |
| A17      | 05056025  | Adaptor Coupling                    | 2        |
| A18      | 05056044  | Adaptor Clip                        | 2        |
| A19      | 05056090  | Screw-ST4.2×13(Hexagon with Washer) | 2        |
| A20      | 21709003  | Secure Clip                         | 2        |
| A21      | 05056140  | Valve Connector                     | 1        |
| A22      | 05056065  | O-ring-φ23.6×2.65                   | 2        |
| A23      | 21319006  | Screw Adaptor                       | 2        |
| A24      | 26010103  | O-ring-φ25×3.55                     | 1        |
| A25      | 07060007  | Valve Bottom Connector              | 1        |
| A26      | 13000426  | Screw-ST2.9×13(Large Wafer)         | 2        |
| A27      | 05056038  | Drain Fitting                       | 1        |
| A28      | 26010003  | O-Ring-φ18×2.65                     | 1        |
| A29      | 05056036  | DLFC Button Retainer                | 1        |
| A30      | 05056079  | O-Ring-φ15×0.8                      | 1        |
| A31      | 05056143  | DLFC-2#                             | 1        |
| A32      | 05056035  | BLFC Button Retainer                | 1        |
| A33      | 05056191  | BLFC-2#                             | 1        |
| A34      | 05056138  | O-Ring-φ14×1.8                      | 1        |
| A35      | 05056100B | BLFC Fitting                        | 1        |
| A36      | 05056106  | Brine Line Screen                   | 1        |
| A37      | 05056107  | BLFC Tube Insert                    | 1        |
| A38      | 05056033  | BLFC Female                         | 1        |
| A39      | 05056108  | BLFC Fitting Nut                    | 1        |
| A40      | 05056086  | Screw-M5×30(Hexagon with Washer)    | 2        |
| A41      | 05056029  | Injector Cover                      | 1        |
| A42      | 05056072  | O-Ring-φ24×2                        | 1        |
| A43      | 05056103  | Injector Screen                     | 1        |
| A44      | 05056027  | Injector Nozzle                     | 1        |
| A45      | 05056028  | Injector Throat                     | 1        |
| A46      | 05056177  | Injector Body                       | 1        |
| A47      | 05056075  | Injector Seat                       | 1        |
| A48      | 05056134  | O-Ring-φ12×2                        | 1        |
| A49      | 05056054  | Injector Stem                       | 1        |
| A50      | 05056031  | Injector Spacer                     | 1        |
| A51      | 05056081  | O-Ring-φ12.5×1.8                    | 1        |
| A52      | 05056030  | Injector Cap                        | 1        |
| A53      | 05056093  | Injector Screen                     | 1        |
| A54      | 05010049  | Special Washer                      | 1        |
| A55      | 05056105  | Retaining Ring                      | 1        |
| A56      | 05056067  | O-Ring-φ7.8×1.9)                    | 2        |
| A57      | 05056037  | Air Dispenser                       | 1        |
| A58      | 05056066  | O-Ring-φ11×2                        | 1        |

## Trouble Shooting

| Issue   | Possible Cause                                       | Possible Solution  |
|---|--|--|
| A. Unit fails to initiate a regeneration cycle. | 1. No power supply.                                  | Check electrical service, fuse, etc.   |
|   | 2. Defective circuit board.                          | Replace faulty parts.  |
|   | 3. Power failure.                                    | Reset time of day.   |
| B. Water is hard.                               | 1. By-pass valve open.                               | Close by-pass valve.   |
|   | 2. Out of salt.                                      | Add salt to tank.  |
|   | 3. Plugged injector / screen.                        | Clean parts.   |
|   | 4. Flow of water blocked to brine tank.              | Check brine tank refill rate.  |
|   | 5. Hard water in hot water tank.                     | Repeat flushing of hot water tank required.  |
|   | 6. Leak between valve and central tube.              | Check if central tube is cracked or o-ring is damaged. Replace faulty parts.       |
|   | 7. Internal valve leak.                              | Replace valve seals, spacer, and piston assembly.                                  |
| C. Salt use is high.                            | 1. Refill time is too high.                          | Check refill time setting.   |
| D. Low water pressure.                          | 1. Iron or scale build up in line feeding unit.      | Clean pipes.   |
|   | 2. Iron build up inside valve or tank.               | Clean control and add resin cleaner to clean bed. Increase regeneration frequency. |
|   | 3. Inlet of control plugged due to foreign material. | Remove piston and clean control valve.   |
| E. Resin in drain line.                         | 1. Air in water system.                              | Check well system for proper air eliminator control.                               |
|   | 2. Incorrect drain line flow control (DLFC) button.  | Check for proper flow rate.  |
| F. Too much water in brine tank.                | 1. Plugged injector or screen.                       | Clean parts.   |
|   | 2. Valve not regenerating.                           | Replace circuit board, motor, or control.  |
|   | 3. Foreign material in brine valve.                  | Clean parts.   |
| G. Unit fails to draw brine.                    | 1. Drain line flow control is plugged.               | Clean parts.   |
|   | 2. Injector or screen is plugged.                    | Clean parts.   |
|   | 3. Inlet pressure too low.                           | Increase pressure to 25 PSI.   |
|   | 4. Internal valve leak.                              | Replace seals, spacers, and piston assembly.                                       |
| H. Valve continuously cycles.                   | 1. Defective position sensor PCB.                    | Replace faulty parts.  |
| I. Flow to drain continuously.                  | 1. Valve settings incorrect.                         | Check valve settings.  |
|   | 2. Foreign material in control valve.                | Clean control.   |
|   | 3. Internal leak.                                    | Replace seals, spacers, and piston assembly.                                       |

# Manufacturers Warranty

**EWT Europe.** warrants that your new water conditioner is built of quality material and workmanship. When properly installed and maintained, it will give years of trouble free service.

## **Five Year Complete Parts Warranty:**

**EWT Europe.** will replace any part which fails within 60 months from date of manufacture, as indicated by the serial number, provided the failure is due to a defect in material or workmanship. The only exception shall be when proof of purchase or installation is provided and then the warranty period shall be from the date thereof.

## **Ten Year Warranty on Mineral Tanks and Brine Tanks:**

**EWT Europe.** will provide a replacement mineral tank or brine tank to any original equipment purchaser in possession of a tank that fails within 120 months, provided that the water conditioner is at all times operated in accordance with specifications and not subject to freezing.

## **General Provisions:**

**EWT Europe.** assumes no responsibility for consequential damage, labour or expense incurred as a result of a defect or for failure to meet the terms of this warranty because of circumstances beyond its control.



**EWT Europe**  
Unit 215,  
Blanchardstown Corporate Park 2,  
Dublin 15  
Ireland