Water Specialists

GOLD SERIES

Softener Operation Manual

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.**

Rev 12, December 28, 2011

System Specifications

Figure 2.Specifications

- Maximum Water Temperature = 110°F (43°C)
- Maximum Operating Pressure = 100 PSIG (689 kPa)
- Voltage = 110 volts standard
- Pipe Size = 1”
- 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

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.

Figure3. Valve Display

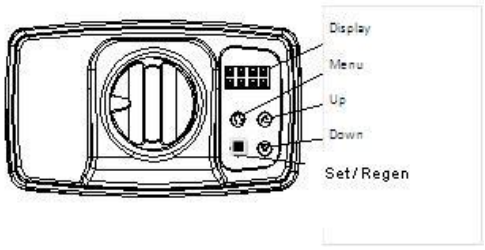


Figure 3. Valve Display

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.

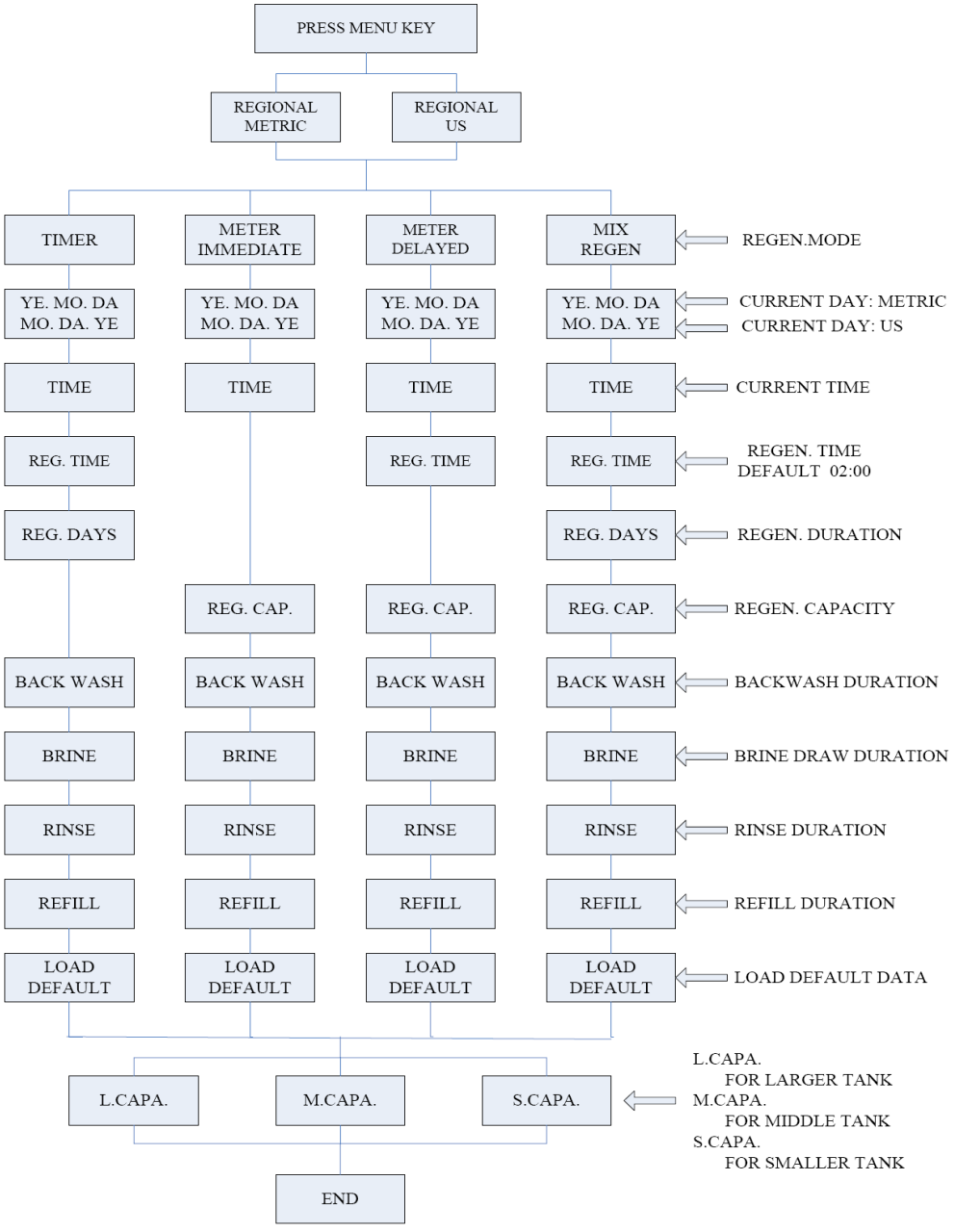


Figure4. Program Flow Chart

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	**Meter initiated with Day Override.** 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	L.CAPA.	**It is not recommended to use any of these options.** The function of this option is to load pre-set values of BACKWASH, BRINE, RINSE, and REFILL for large, medium, and small capacity systems. **We recommend to use the settings as specified in the SYSTEM CONFIGURATION section of this manual.**
		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

	**CAUTION** ▪ **Do not exceed 120 psi water pressure.** ▪ **Do not exceed 110°F water temperature.** ▪ **Do not subject unit to freezing conditions.**

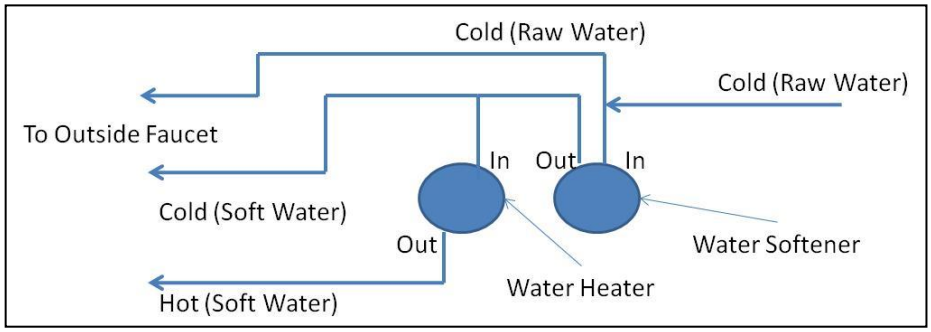


Figure 6. Piping Diagram

Installing the Bypass valve

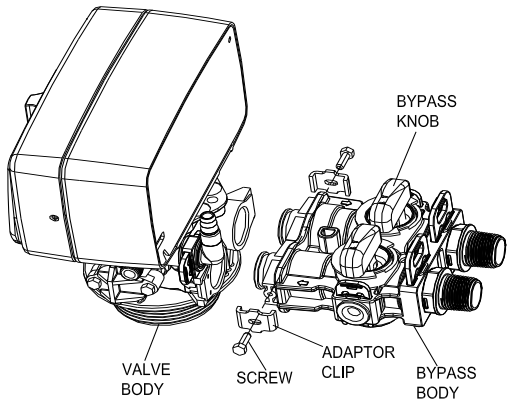
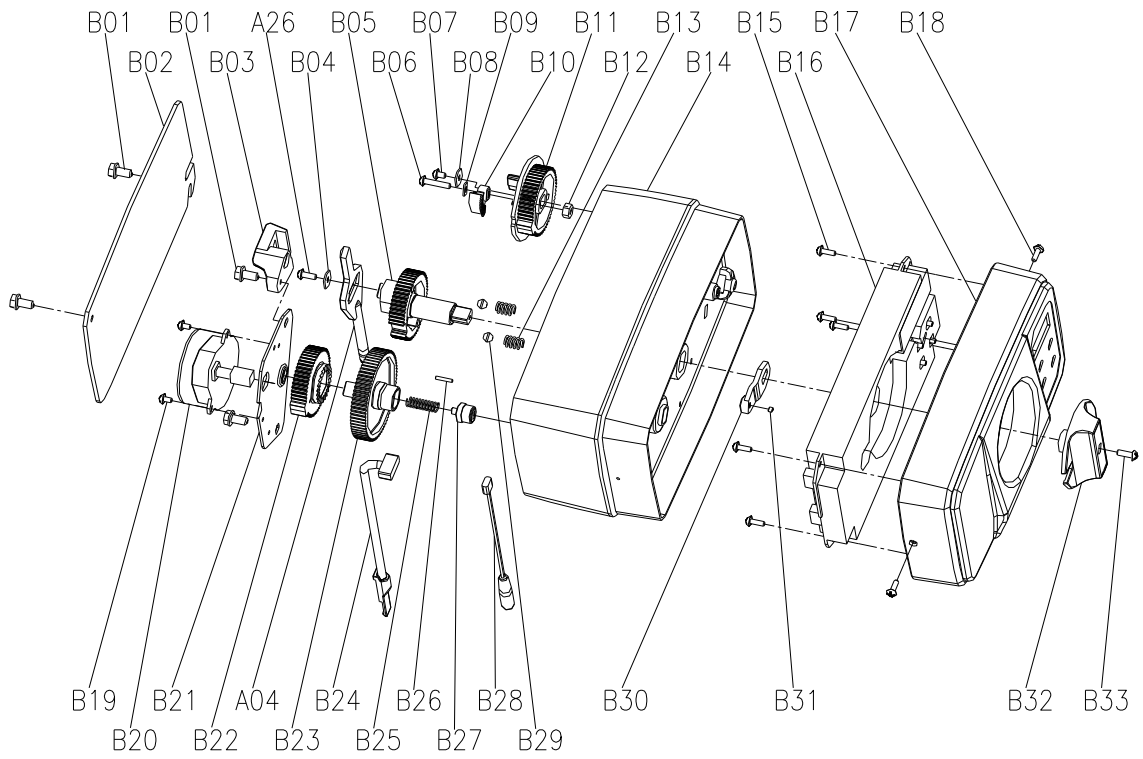


Figure 7. Bypass Assembly View

Power Head Exploded View

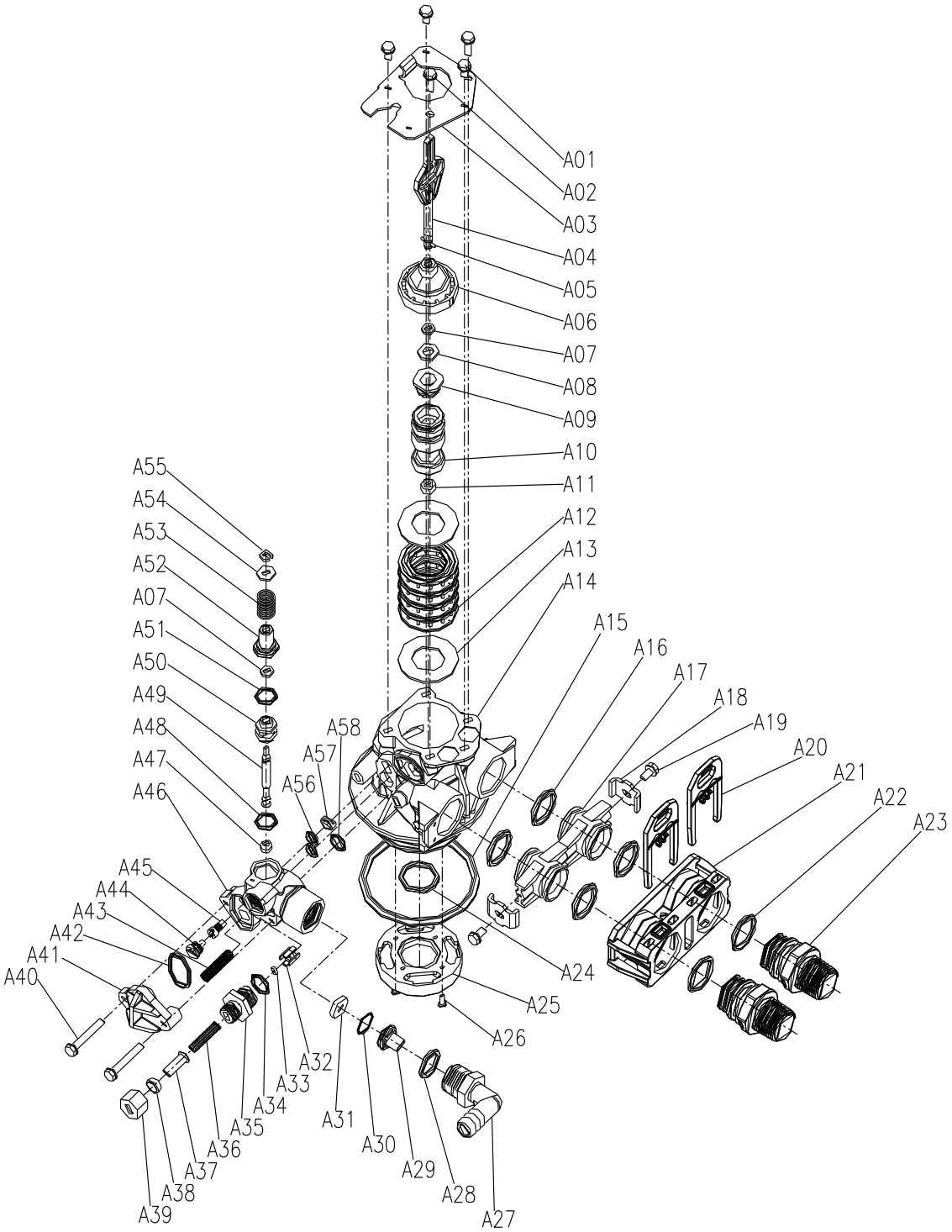


See parts listing on next page (12)

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 Discription	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	Bnt65 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 (Electrical)	1
A11	05056104	Muffler	1
A12	05056021	Spacer	4
A13	05056073	Seal	5
A14	05056019	Bnt65 Valve Body	1
A15	05056063	O-ring-φ78.74×5.33	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 Ferrule	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	Injtor 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 Disperser	1
A58	05056066	O-Ring-φ11×2	1