GENESIS 2 ELIMINATOR
CHEMICAL FREE AIO FILTER
SERVICE MANUAL

OWNERS MANUAL



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Application Check List and Flushing Instructions

1. The Genesis 2 AIO system should not be used on water having an iron content above 7 ppm or 7 mg/1.
2. Free chlorine should be removed before passing water through the media.
3. The Genesis 2 AIO removes dissolved iron from water, which is present as ferrous iron. Iron can also exist in other forms such as bacterial iron, soluble organic iron and colloidal iron. Those forms of iron cannot be removed effectively by an Genesis 2 AIO.
4. Any sequestering agents including polyphosphates and meta-phosphate should be added after the Genesis 2 AIO System.
5. For high iron content in feed water (> 7 ppm) it is recommended to backwash the unit with treaded water, so as to avoid contamination of bottom portion of the bed.
6. The unit must be backwashed a specified flow rate resulting in 60% bed expansion for effective removal of precipitated iron and suspended solids.
7. The start-up backwash and rinse prior to new service installation is critical for cleaning media of manufacturing color, taste and any trace amine odors. We recommend 2 bed volumes of backwash followed by 2 bed volumes of fast rinse. This timing is explained in Schedule B.
8. The backwash frequency shall be every 12 to 24 hours for **continuous operatingsystems**. If the unit is operating intermittently, backwash per Fe Clear recommendations in Schedule A.

Schedule A

1 to 3 ppm Fe (Iron)

Maximum flow rate 4.0 US GPM/Ft3
Media backwash frequency: Every Three Days

4 to 6 ppm Fe (Iron)

Maximum flow rate 2.5 US GPM/Ft3
Media backwash frequency: Every Two Days

7 to 9 ppm Fe (Iron)

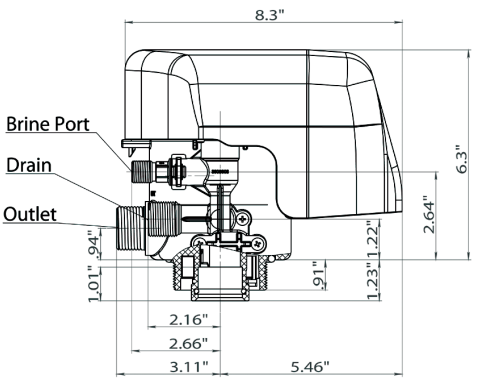
Maximum flow rate 2.0 US GPM/Ft3
Media backwash frequency: Daily

Schedule B

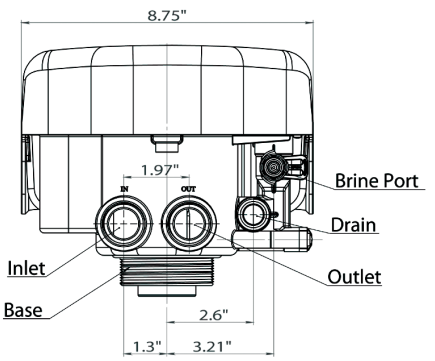
One cubic foot: Backwash is 14 minutes and fast rinse is 14 minutes.
One and one-half cubic feet: Backwash is 20 minutes and fast rinse is 20 minutes.
Two cubic feet: Backwash is 16 minutes and fast rinse is 16 minutes.

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System Specifications







Genesis 2 AIO System Specifications

Model*	Resin Cubic Feet	Overall Height Inches	Diameter Inches	Flow Rate Gallons Per Minute[1]	Water (Gallons) Used Per Backwash[2]	Gallons Per Backwash < 3 PPM[3]	Gallons Per Backwash > 3 PPM[3]
GEN2AIO10	1	60.9	10	7.5	45	75	45
GEN2AIO15	1.5	59.0	12	10	47	100	60
GEN2AIO20	2	61.4	13	12.5	63	125	75
GEN2AIO25	3	72.2	14	15	74	150	90
GEN2AIO30	4	72.1	16	20	91	200	120

* Additional Sizes Available
1 - Flow Rate at 5 GPM/Cubic Foot
2 - Usage Based on Water Supply Quality; Usage ± 10%
3 - System Through-put is Based on Ferrous Iron **ONLY**

Electrical / Operational Specifications

Control Valve		Working Conditions	
Transformer Input	120VAC - 60Hz	Water Pressure	20 -120 PSI
Transformer Output	12VDC - 2A	Water Tempurature	35˚F - 125˚F
Valve Wattage	24W	Iron Level[4]	1 to 5 PPM Ferrous

4 - For Ferric Iron and Ferous Iron Over 5 PPM, Contact PWT Technical Support

Control Valve Parameters

Inlet	Outlet	Drain[5]	Base	Riser Tube	Hard Water Bybass
3/4, 1″	3/4, 1″	1/2″ Barb	2.5″ - 8NPSM	1-1/4″	Yes - During Regeneration

Additional Specifications

Valve Material	Tank Material	Meter Accuracy	Clock
Noryl® Plastics	FRP	± 5%	12 Hour - with Battery Back-up

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Product Features and Applications

Primary Applications

Recommended for commercial and residential softening or demineralization water treatment systems.

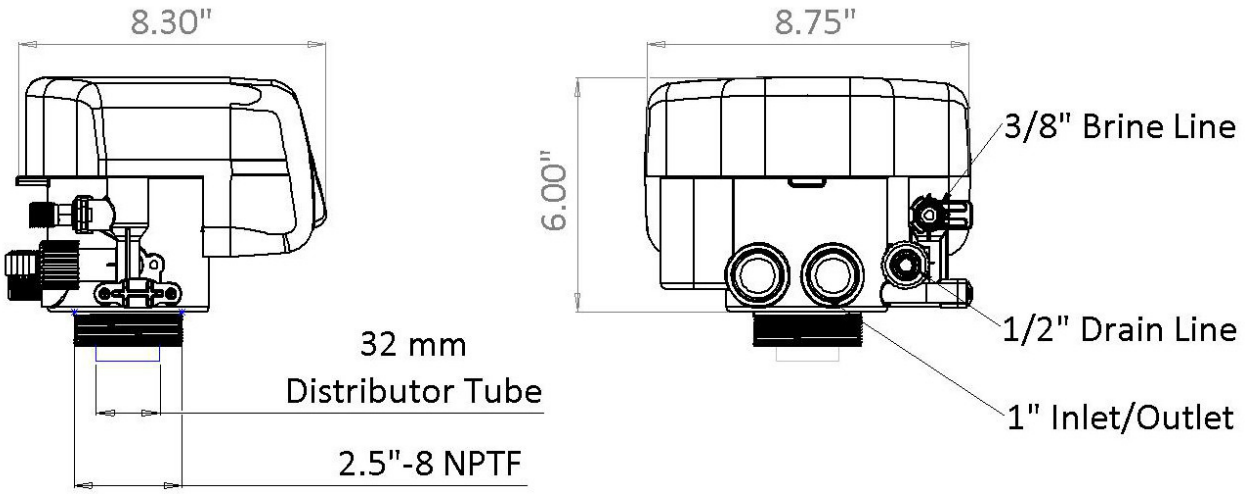
- Softening System Pre-Treatment
- Iron Removal System
- Ion Exchange Equipment
- Boiler Softening Water Treatment
- RO Pre-Treatment

Product Characteristics

- **Mechanical Components**
  The Genesis 2 AIO used internal ceramic discs which are corrosion and abrasion resistant to form and hermetic seal. Rotation of the upper disc aligns to the corresponding lower disc ports for Service, Backwash, Brine & Slow Brine, Brine Refill and Fast Rinse modes.
- **Excellent Flow Rate:** Up to 20 gpm @ 15 psi drop
- **365 Day Usage Memory**
- **Manual/DelayedRegeneration**
  Pressing at any time results in an immediate manual regeneration.
  Pressing and holding for 3 seconds, when system is locked, results in a delayed regeneration at the preselected time.
- **Extended Power Outage Indicator**
  If outage exceeds 3 days, the time of day indicator " " will flash 12:12. The current time of day needs to be re-set. All other set parameters remain stored in memory. The valve will resume to operate form the point of the power outage.
- **Three Regeneration Sequences**
- **Lockout Function**
  Keypad will lock after 5 minutes without use. To access the parameter changes press and hold and simultaneously for 3 seconds to unlock.
- **LCD Display Screen**
- **Maximum Day Regeneration Interval**
  When the valve reaches the maximum programmed service days, without reaching the set service capacity, it will trigger a regeneration at the pre-programmed time of day. Regeneration(s) reset both the maximum day regeneration value and the service capacity value.
- **One Button to Change the Current Time**
  Pressing and holding the button for 3 seconds, when system is locked, allows the current time of day to be adjusted.
- **Service Alarm**
  When the service alarm feature counts-down and reaches set point, (Selectable 30 day min to 900 day max in 30 day increments) the alarm will activate at 8pm. The alarm will sound for 2 minutes and then shut off automatically. To silence alarm within the 2 minute period, press any button. A service call message will then appear on the screen as a signal for the homeowner to contact a water treatment professional for routine service. To eliminate this message from the screen, unlock the valve programming by pressing the UP and DOWN arrows simultaneously until the padlock in the upper left corner of the screen disappears (approximately 3 seconds). Next, enter the programming menu by pressing the MENU/CONFIRM button once and then pressing the BACK/REGENERATION button once. The system will then go back to normal status and the operational days will re-start new count-down. Note: The system will operate normally when it is displaying the service alarm message.

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Product Dimensions and Specifications



Model	Length(max)	Width(max)	Height (max)	Regeneration Mode
Genesis 2 AIO	8.3”	8.75”	7.5”	Downflow
The valve dimensions are for reference only.				

Connect Port Dimensions					
Product Model	Inlet Port	Outlet Port	Drain Port	Base	Riser Pipe
Genesis 2 AIO	1” NPT	1” NPT	3/4” NPT	2.5” 8NPSM	32 mm

Main Technical Parameters

Power Input	100-240VAC 50/60Hz
Power Output	12VDC @ 2A
Regeneration Cycles	Sequence 1: Service → Backwash → Air Draw → Fast Rinse
Regeneration Mode	A-01 Meter Delay: Regeneration happens when the capacity reaches zero and the preset time of regeneration is reached. A-02 Meter Immediate: Regeneration happens when the capacity reaches zero. A-03 Intelligent Meter Delay: The same delay function as A-01 but the capacity is determined by entering the total Resin Capacity, Feed Water Hardness, and the Number of People in the household. The control valve automatically calculates the gallons for regeneration. A-04 Intelligent Meter Immediate: The same function as A-02 but the capacity is determined by entering the Total Resin Capacity and Feed Water Hardness. The control valve automatically calculates the gallons for regeneration. A-05 Remaining Compare: Compares current usage with previous 365 day daily usage to intelligently determine when regeneration will occur. Regeneration starts at the set regeneration time. A-06 Is Factory Default:- Do not change. A-07 Filter Meter: Filter mode, regeneration occurs when the capacity reaches zero and the preset time for regeneration is reached.

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Pre-Installation Check List

Before installation, read through this manual thoroughly. Then obtain all materials and tools needed for installation.

This system will operate at maximum efficiency when the following conditions are considered.

Required Genesis 2 AIO Operation Conditions:		
Working Conditions	Working pressure	20psi - 120psi
	Water temperature	35 °F - 125 °F
Working Environment	Environment temperature	35 °F - 125 °F
	Relative humidity	≤95%
	Power source	100 - 240VAC 50/60Hz
Inlet Water Quality	Turbidity	2FTU
	Chlorine	0.1 mg/l or less
	$Iron^{2+}$ / $Iron^{3+}$	7 mg/l MAX

- All plumbing and electrical work should be performed by an accredited professional to ensure all federal, state, local and municipal regulations are met.
- Do not use the system with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.
- When there is moderate to high turbidity, a filter should be installed before the water softening system on the inlet side.
- If the water pressure exceeds 120psi, a pressure reducing valve must be installed before the water inlet. If the water pressure exceeds 80 psi, installing a pressure reducing valve before the water inlet is highly recommended. If the water pressure is under 20 psi, a booster pump must be installed before the water inlet.
- Replacement parts for the Genesis 2 AIO valve should only be purchased through Discount Water Softeners resellers. Electrical transformers are specific to the Genesis 2 AIO valve from Discount Water Softeners.
- Regular interval monitoring of the water quality and work environment is recommended to ensure proper operation of the valve system.
- Any modifications the Discount Water Softeners equipment, which is outside the standard scope of supply, voids the product warranty.
- Discount Water Softeners equipment, like all modern electronic devices, can be damaged by electrical surges or brown outs. Every effort has been taken to harden the circuits, by design, to protect against such events. These precautions, or even additional surge protection, are not 100% effective. Therefore, equipment damage caused by abnormal electrical events is not covered by warranty.
- Complete system must be protected from outdoor elements such as rain, moisture and direct sunlight. Failure to do so voids warranty.

*****Failure to use this product within the described conditions may void the warranty*****

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Installation

Installation Notice

- Before installation, read through this manual thoroughly and obtain all materials and tools needed for installation.
- All plumbing and electrical work should be performed by an accredited professional to ensure all federal, state, local and municipal guidelines are met.

Unit Location

- The filter should be located close to the floor drain away from direct sunlight and any heat sources.
- Protect equipment form direct sunlight and precipitation exposure.
- Install equipment in a location safe from unauthorized access or vandalism.
- Ensure that the unit is installed with enough space for operation and maintenance.
- The installation surface should be clean and level.
- Install the unit in an environment which minimizes consumer risk of loss in the event of malfunction.
- Discount Water Softeners offers many different product for many different applications, for both indoor and outdoor environments. If you are not 100% sure the equipment purchase is suitable for the installation application or environment, please check with a Discount Water Softeners representative, or your local equipment provider, to ensure the proper equipment is selected. Equipment installed in inappropriate applications or environment are not covered by warranty.

Plumbing and Mechanical Setup

Note:

1) If making a soldered copper installation, all sweat soldering should be done before connecting pipes to the valve. Torch heat will damage plastic parts.
2) When turning threaded pipe fittings onto plastic fitting, take precaution not to cross thread or over tighten.

Control Valve Installation

- As Figure 1-1 shows; insert a 32mm riser pipe with bottom basket into the center of the mineral tank. If pipe is higher than the tip of the pressure tank, mark it, remove from tank, and cut. Take care to keep foreign material out of pressure tank. ***Note:*** *The length of the riser pipe should be below tank flange. The distance from the top of the tank to the top of the pipe should be between* ***3/16" and 1/4"****. The edges of the pipe should not be sharp to avoid damage to the seal inside the Genesis 2 AIO valve.*
- Install Valve Base O-ring around the neck of the valve.
- Lubricate the center hub O-ring of the Genesis 2 AIO valve.
- Install the top basket with a twist and lock action to center hub of the Genesis 2 AIO valve.
- Place Genesis 2 AIO valve onto tank with the distribution pipe inserted down the middle of the top basket. Rotate clockwise to secure onto the tank. **Do not overtighten! Overtightening may cause the valve to crack and void the warranty.**

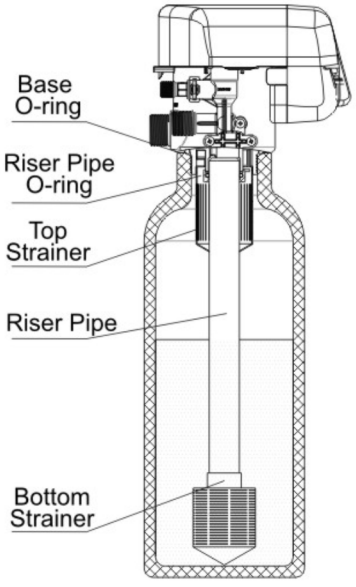


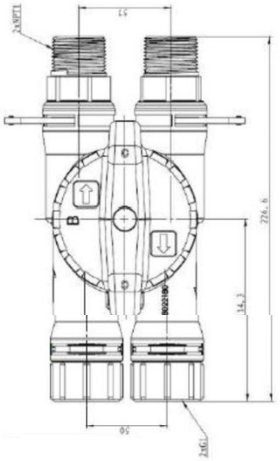
Figure 1-1

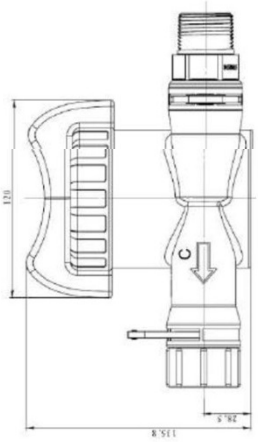
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Installation- Continued

Ceramic Bypasses

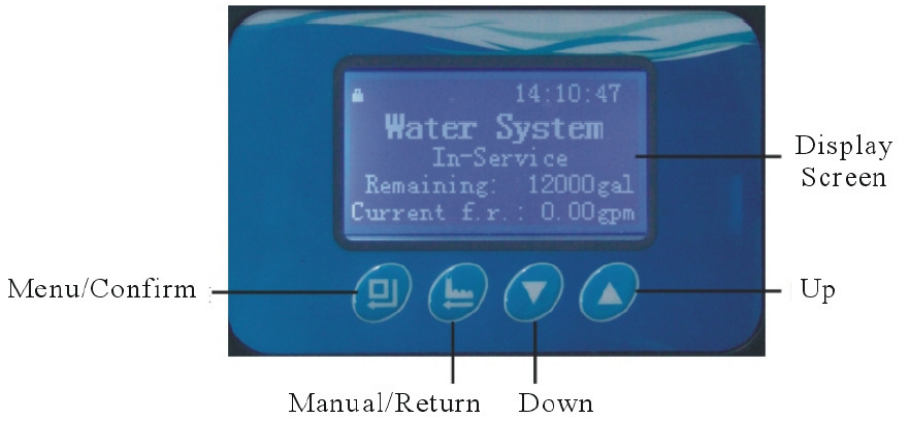
Part Number 41205
Ceramic Bypass





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Programming: Display and Instructions



Programming Instructions

Manual / Delayed Regeneration

Pressing at any time results in an immediate manual regeneration.
Pressing and holding for 3 seconds, when system is locked, results in a delayed regeneration at the preselected time.

One Button to Change the Current Time

Pressing and holding the button for 3 seconds, when system is locked, allows the current time of day to be adjusted.

Unlocking the Keypad

icon indicates the buttons are locked within 5 minutes of idle use. To unlock press and hold and for 3 seconds until the icon is off.

Enter Key

Press button to enter the basic programming mode, modify highlighted options, and return to the main menu.

Manual Regen/Esc. Key

Press at any phase during manual regeneration to advance to the next phase or press during programming to exit to the home screen without modifying the current highlighted option.

Up and Down Arrows

or buttons are used to scroll through the various basic programming options as well as adjust values.

Programming Modes

- Basic Programming – Allows you to adjust the time values for each phase. To enter basic programming, follow the directions below.
  - When the icon is on, press and hold both and for 3 seconds to unlock the keypad; then press to enter the main menu; press or to highlight each option. Press to enter that option. Press or to adjust the value. Press to accept changes. (Press to exit back to service status)

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Warranty

Limited Warranty

As described herein, Discount Water Softeners Inc. warrants its products are free from defects in material and workmanship only, when properly installed, operated, and maintained. This warranty is subject to the exceptions herein.

Discount Water Softeners Inc. warrants to the original owner that the items listed below, excluding but not limited to wear parts like O-rings, gaskets and seals, will be free from defects in materials and workmanship for the period of time specified below from the original purchase date.

- Control valves and all internal valve parts and the salt storage tank – LIFETIME
- Mineral tank – LIFETIME
- Any other component – ONE(1) YEAR
- Ceramic disc for rotary valve (applicable to AIO series valves only) – LIFETIME

Media/resin is not warrantied due to water supply quality differences

Any parts used for replacement are warrantied for the remainder of the original warranty period applicable to the part from the date of manufacture so long as the parts are installed by a Discount Water Softeners Inc. factory trained and authorized installer. Discount Water Softeners Inc.'s obligation by this Limited Warranty, at is option, is to repair or replace any warrantied product only. Labor for repair or replacement is not included as part of this warranty. Prior to returning the product to Discount Water Softeners Inc., a valid return materials authorization number must be obtained from Discount Water Softeners Inc. Any product returned to Discount Water Softeners Inc. without a valid return authorization number will be rejected. Any product found to be defective will, at the sole discretion of Discount Water Softeners Inc., be repaired or replaced. Discount Water Softeners Inc. is not responsible for shipping cost to the repair facility. This section lists the sole remedies for any valid warranty claim.

This warranty does not apply to defects reported to Discount Water Softeners Inc. outside of the warranty period.

This warranty does not apply to defects caused by installing, operating, servicing, modifying, repairing or maintaining (or lack of maintaining) the product outside of Discount Water Softeners Inc.'s recommendations. Filters, membrane elements and flow restrictors that become fouled or plugged due to excessive turbidity, dissolved solids, or microorganisms are not covered by this warranty. This warranty does not apply to defects caused by damage during shipment, neglect, misuse, modification, accident, noncompliance with local codes and ordinances, hot water, frozen water, sediment, corrosive liquids, gases, chemicals, bacteria, animals, sand, salt, flood, wind, fire, outdoor installations where the product is not reasonably covered, pneumatic use, natural disasters, war, terrorism or acts of God. No other person is authorized to make any other warranty on behalf of Discount Water Softeners Inc. either during or after the applicable warranty period.

Discount Water Softeners Inc. assumes no liability for determining the proper products and equipment or installation necessary to meet the requirements of the user of the product, and Discount Water Softeners Inc. does not authorize others to assume such liability on its behalf.

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