



- **KATALOX BACKWASHING IRON AND SULFUR FILTER**

- **CARBON FILTER (TASTE AND ODOR)**

- **BIRM FILTER**

- **PH NEUTRALIZER**

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.
3. This system is not intended for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

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Unpacking / Inspection

Be sure to check the entire water softener shipment for possible damage that may occur in transit. Contact Support@DiscountWaterSofteners.com for all damage and loss claims.

Small parts, needed to install the filter, are in a small parts bag. To avoid loss of the small parts keep them in the parts bag until you are ready to use them.

Safety Guide

For your safety, the information in this manual must be followed to minimize the risk of electric shock, property damage or personal injury.

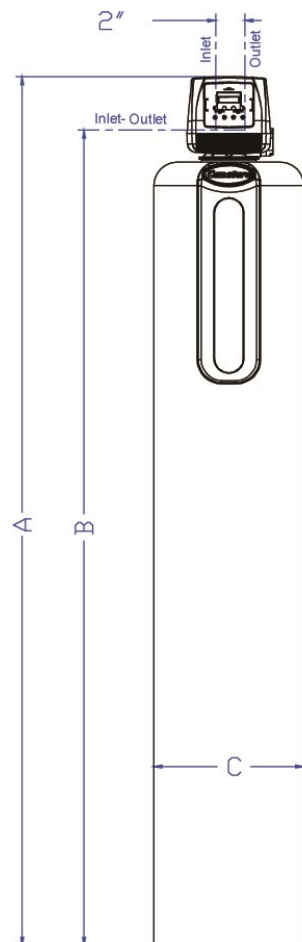
- Check and comply with your state and local codes. You must follow these guidelines.
- Use care when handling the filter tank. Do not turn upside down, drop, drag or set on sharp protrusions.
- The system works on 12 volt-60 Hz electrical power only. Be sure to use only the included transformer.
- Transformer must be plugged into an indoor 120 volt, grounded outlet only.
- **WARNING:** This system is not intended for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

Proper Installation

This water filter system must be properly installed and located in accordance with the Installation Instructions before it is used.

- Do not** install or store where it will not be exposed to temperatures below freezing or exposed to any type of weather. Do not attempt to treat water over 100°F.

Do not install in direct sunlight. Excessive sun or heat may cause distortion or other damage to non-metallic parts. Properly ground to conform with all governing codes and ordinances.
- Use only *lead-free solder and flux* for all sweat-solder connections, as required by state and federal codes.
- Maximum allowable inlet water pressure is 125 psi. If daytime pressure is over 80 psi, night time pressure may exceed the maximum. Use a pressure reducing valve to reduce the flow if necessary.
- WARNING:** Discard all unused parts and packaging material after installation. Small parts remaining after the installation could be a choke hazard.



	NST45UD1	NST70UD1
A	50-3/8"	64"
B	41-5/8"	55-1/2"
C	11"	13"

Specifications

ALL FILTERS	
Normal Service Flow Rates	3/4" (Optional 1")
Peak Service Flow Rates	Input 120V 60 Hz - Output 12V 650mA
Micron Rating	Min 39 - Max. 100 degrees Fahrenheit
Backwash Flow Rate	Min. 20 - Max. 125 psi

KATALOX IRON AND SULFUR FILTER				
SPECIFICATIONS	GENKAT75	GENKAT10	GENKAT15	GENKAT20
Normal Service Flow Rates	4.0 gpm	5.0 gpm	7.0 gpm	10.0 gpm
Peak Service Flow Rates	5.0 gpm	7.0 gpm	10.0 gpm	12.0 gpm
Micron Rating	3	3	3	3
Backwash Flow Rate	4.0 gpm	5.0 gpm	7.0 gpm	10.0 gpm
Filter Media Volume - Cubic Feet	.75 cu ft	1.0 cu ft	1.5 cu ft	2.0 cu ft
Filter Tank Size	8 x 44	9 x 48	10 x 54	12 x 52
Media Loaded	Yes	Yes	Yes	Yes

CATALYTIC CARBON FILTER				
SPECIFICATIONS	GENCC75	GENCC10	GENCC15	GENCC20
Normal Service Flow Rates	4.0 gpm	5.0 gpm	7.0 gpm	10.0 gpm
Peak Service Flow Rates	5.0 gpm	7.0 gpm	10.0 gpm	12.0 gpm
Backwash Flow Rate	4.0 gpm	5.0 gpm	7.0 gpm	10.0 gpm
Filter Media Volume - Cubic Feet	.75 cu ft	1.0 cu ft	1.5 cu ft	2.0 cu ft
Filter Tank Size	8 x 44	9 x 48	10 x 54	12 x 52
Media Loaded	Yes	Yes	Yes	Yes

PH NEUTRALIZER				
SPECIFICATIONS	GENNL75	GENNL10	GENNL15	GENNL20
Normal Service Flow Rates	4.0 gpm	5.0 gpm	7.0 gpm	10.0 gpm
Peak Service Flow Rates	5.0 gpm	7.0 gpm	10.0 gpm	12.0 gpm
Backwash Flow Rate	4.0 gpm	5.0 gpm	7.0 gpm	10.0 gpm
Filter Media Volume - Cubic Feet	.75 cu ft	1.0 cu ft	1.5 cu ft	2.0 cu ft
Filter Tank Size	8 x 44	9 x 48	10 x 54	12 x 52
Media Loaded	Yes	Yes	Yes	Yes

BIRM FILTER				
SPECIFICATIONS	GENB75	GENB10	GENB15	GENB20
Normal Service Flow Rates	4.0 gpm	5.0 gpm	7.0 gpm	10.0 gpm
Peak Service Flow Rates	5.0 gpm	7.0 gpm	10.0 gpm	12.0 gpm
Backwash Flow Rate	4.0 gpm	5.0 gpm	7.0 gpm	10.0 gpm
Filter Media Volume - Cubic Feet	.75 cu ft	1.0 cu ft	1.5 cu ft	2.0 cu ft
Filter Tank Size	8 x 44	9 x 48	10 x 54	12 x 52
Media Loaded	Yes	Yes	Yes	Yes

- Continuous operation at flow rates greater than the service flow rate may effect capacity and efficiency performance.
- 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.
- Peak flow rates are intended for intermittent use only and are for residential application only.
- At the stated service flow rates, the pressure drop through these devices will not exceed 15 psi.

Catalytic Carbon (Taste & Odor Filter)

Unpleasant tastes and odors caused by chlorine, chloramines, or organic substances such as decayed vegetation and run off are absorbed by high quality activated carbon. The filter is set to automatically backwash on a preset schedule, which frees the media bed of the impurities and readies it for the next cycle.

Katalox Filter

Removes dissolved Iron, Manganese, and Hydrogen Sulfide common in private wells. Katalox oxidizes these impurities and holds them in the media bed. If iron bacteria or organics are present in the water a chlorine solution tank may be required to allow the media to operate properly. Backwashing is required every 3 days.

Birm Filter

A backwashing filter containing special media that causes the iron dissolved in the water to precipitate throughout the filter bed. This process produces an iron removal capacity of up to 30,000 ppm. The media requires no chemical regenerant for oxygen enrichment. Periodic backwashing of the filter bed flushes the precipitated iron to the drain and readies the filter for use again. The duration of the backwash procedure will vary depending on the iron concentration but generally is 20 minutes total. The frequency of backwashing depends on iron concentration and water usage and ranges from daily to once every 5 days. Not for use with waters containing hydrogen sulfide or iron bacteria. Dissolved iron levels above 5ppm may require an additional oxidation mechanism such as a micronizer.

Ph Neutralizer

The neutralizing filter contains blended media which raises the pH of acidic water and neutralizes its corrosive characteristics. In addition to protecting pipes, plumbing fixtures and appliances, this filter also facilitates the removal of iron and manganese by raising the pH. This enables an iron filter to be used. Periodic backwashing cleans the bed. Additional media may be required six months to two years after installation, depending on the water's pH.

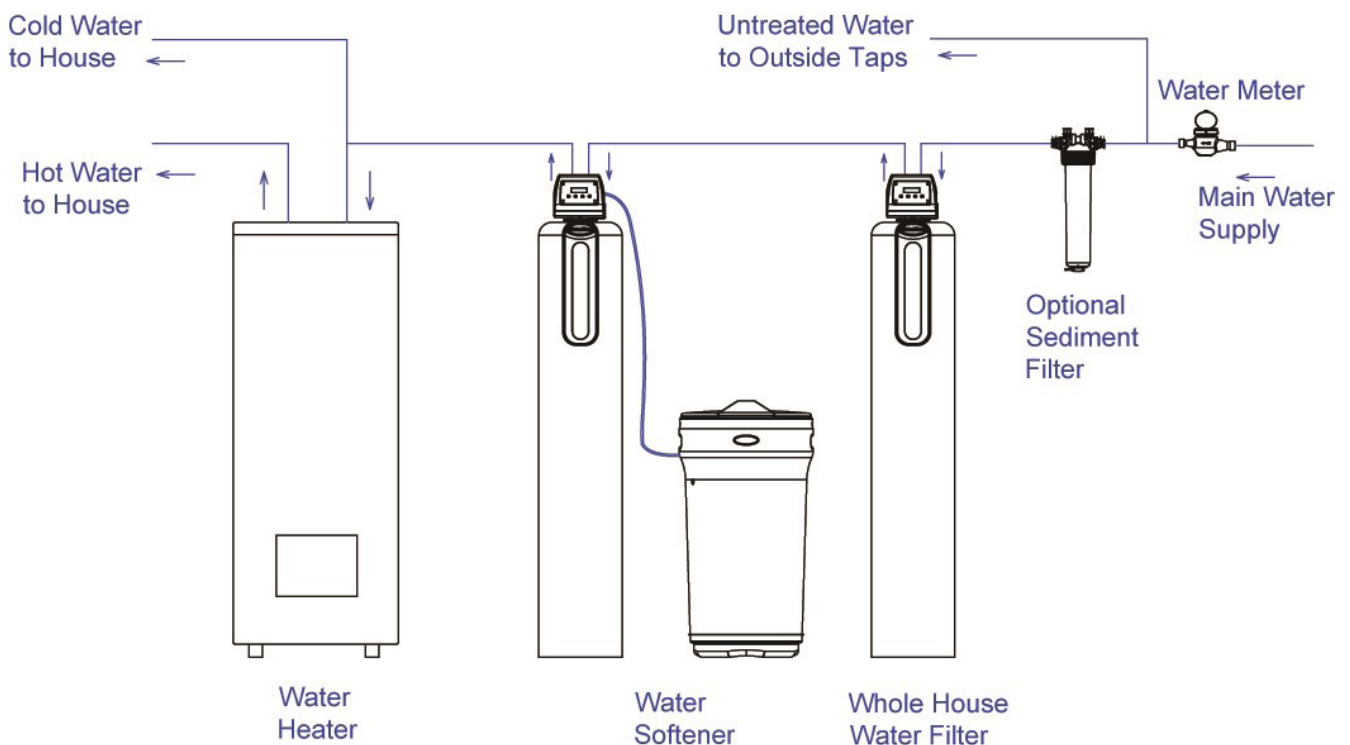
Getting Started

Items Needed For Installation

- Pliers
- Screwdriver
- Teflon tape
- Razor knife
- Two adjustable wrenches
- Additional tools may be required if modification to home plumbing is required.
- Plastic inlet and outlet fittings are included with the softener. To maintain full valve flow, 3/4" or 1" pipes to and from the softener fittings are recommended. You should maintain the same, or larger, pipe size as the water supply pipe, up to the softener inlet and outlet.
- Use copper, brass or PEX pipe and fittings. Some codes may also allow for PVC plastic pipe.
- A minimum 1/2" ID Drain Line (optional purchase) and Hose Clamp (not included) are required for proper drainage of the system. Length of the Drain Line will depend on the distance from the unit to the drain.

Where To Install The Filter

- Place the filter tank as close as possible to the pressure tank (well system) or water meter (city water).
- Place the filter tank as close as possible to a floor drain, or other acceptable drain point (laundry tub, sump, standpipe, etc.). Connect the filter to the main water supply pipe BEFORE the water heater. **DO NOT RUN HOT WATER THROUGH THE FILTER.** Temperature of water passing through the filter must be less than 100 deg. F.
- Do not install the filter in a place where it could freeze. **Damage caused by freezing is not covered by the warranty.** Put the filter in a place water damage is least likely to occur if a leak develops. The manufacturer will not repair or pay for water damage.
- A 120 volt electric outlet, to plug the included transformer into, is needed within 6 feet of the filter. The transformer has an attached 6 foot power cable. **Be sure the electric outlet and transformer are in an inside location, to protect from wet weather. DO NOT USE AN EXTENSION CORD.**
- If installing in an outside location, you must take the steps necessary to assure the filter, installation plumbing, wiring, etc., are as well protected from the elements, contamination, vandalism, etc., as when installed indoors.
- **Keep the filter out of direct sunlight.** The sun's heat may soften and distort plastic parts.



Sizing Requirements

Water Pressure

The water system must have a pump big enough to deliver the recommended backwash rate with a minimum pressure at the inlet of the filter of 30 psi. If the existing system cannot do this, it must be upgraded to do so. Whenever possible, the water system should be adjusted to deliver at least 30 psi for even more satisfactory results.

Backwash Flow Rates

The most important criteria in sizing a filter is the capacity of the pump. The water must pass through the filter media at the proper service flow rate. The filter must also be backwashed at a flow rate sufficient to dislodge and remove the captured particles. Failure to provide sufficient water will cause a build-up of particles in the filter media, impairing its ability. In order for your filter to backwash and rinse properly, your pump must be capable of providing the backwash flow rates indicated on page 4.

Check Your Pumping Rate

Two water system conditions must be checked carefully to avoid unsatisfactory operation or equipment damage:

1. Minimum water pressure required at the filter tank inlet is 20 psi.
2. Measuring the pumping rate of your pump:

With the pressure tank full, draw water into a container of known volume, and measure the number of gallons drawn until the pump starts again. This is draw-down. Divide this figure by cycle time and multiply the result by 60 to arrive at the pumping rate in gallons per minute (gpm). To aid in your calculation, insert the date in the following formula:

DRAW-DOWN _____ ÷ CYCLE TIME _____ x 60 = PUMPING RATE _____ (gals)
(secs.) (Gpm)

EXAMPLE: CYCLE TIME is 53 seconds. DRAW-DOWN is 6 gallons; then, PUMPING RATE equals:

$$6 \text{ gallons} \div 53 \text{ seconds} \times 60 = 6.8 \text{ gpm}$$

See chart on page 4 for minimum flow rates.

NOTE: If your pumping rate is inadequate for the model, do not install your filter until the problem has been corrected.

Installation Instructions

1. If your hot water tank is electric, turn off the power to it to avoid damage to the element in the tank.
2. If you have a private well, turn the power off to the pump and then shut off the main water shut off valve. If you have municipal water, simply shut off the main valve. Go to the faucet, (preferably on the lowest floor of the house) turn on the cold water until all pressure is relieved and the flow of water stops.
3. Locate the filter tank close to a drain where the system will be installed. The surface should be clean and level.
4. Apply NSF certified lubricant (included in parts bag) to all seals to protect the O-rings from being pinched during installation. Note: There is an Inner Distributor Tube O-ring and an Outer Control Head O-ring on the underside of the control head. Leave the unit in "BYPASS" position. Attach Upper Screen Cone to underside of Control Valve. Attach the control valve to the media tank (turning clockwise) one half turn past hand tight.
5. Connect the inlet and outlet of the filter using appropriate fittings. Perform all plumbing according to local plumbing codes.
 - Use a 1/2" minimum pipe or tubing size for the drain line
 - **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.
6. If the optional Quick Pro Connector Kit was purchased, please install now. Connect the female threaded end to the bypass valve male threaded connectors. Ensure the water supply and return lines are straight even cuts and free of sharp edges and burrs. Connect the opposite ends of the Quick Pro Connectors to the water supply and return. Fit the female Quick Connect over the pipe and press firmly together so that it is connected fully. It is important that pipe end is flush with the inner rim of the Quick Connect fitting to ensure the connection doesn't leak.
7. Place the unit into the BYPASS position using the Allen Key (included in parts bag). It is normal for the BYPASS valves to be tight and will loosen with a few turns back and forth. Ensure all connections are secure and correct to prevent leaking.
8. Connect the Drain Line to the Drain Elbow Assembly and secure with a hose clamp. Use a Minimum 1/2" ID pipe or tubing for the Drain Line. Run the Drain Line to the nearest drain or laundry tub. Secure the Drain Line at the drain site to ensure it cannot move. Drain Line should not exceed 30ft. The Drain Line can either be run along the floor or up overhead (for an overhead length in excess of 20ft it is recommended to increase the hose size to a minimum 3/4" ID). **ENSURE THE CONNECTION TO THE DRAIN HAS A 1.5" AIR GAP BETWEEN THE END OF THE HOSE AND THE WATER LEVEL OF THE DRAIN TO ENSURE BACKFLOW INTO THE SYSTEM DOES NOT OCCUR. CHECK THE LOCAL AIR GAP CODE FOR PROPER DRAIN LINE INSTALLATION.**
9. Slowly turn on the main water supply. Turn on the nearest treated cold water tap and let the water run for a few minutes until the system is free of any foreign debris resulting from the plumbing work.
10. Proceed to the Start-Up instructions on page 11.

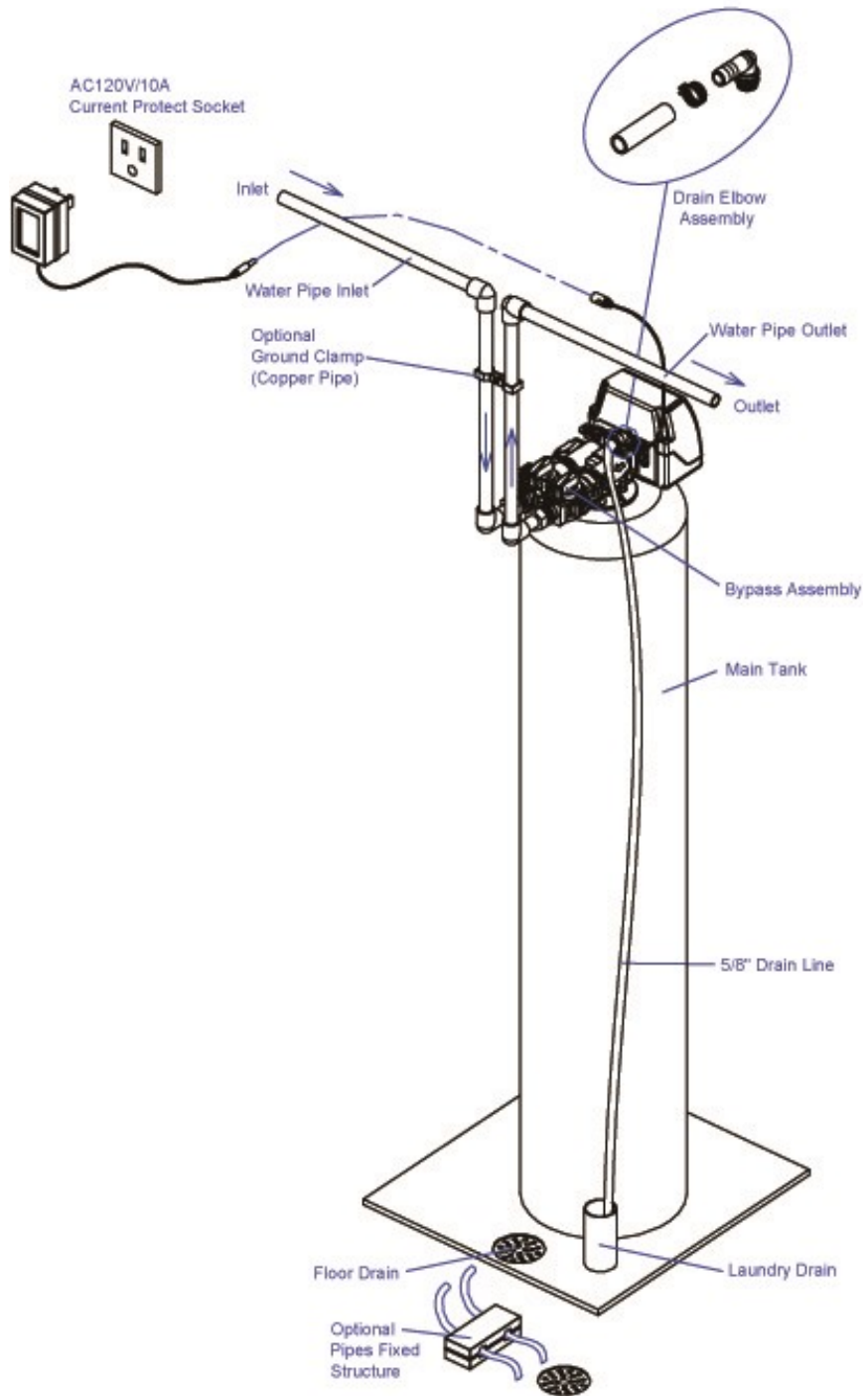
Filter Installation



Service Position



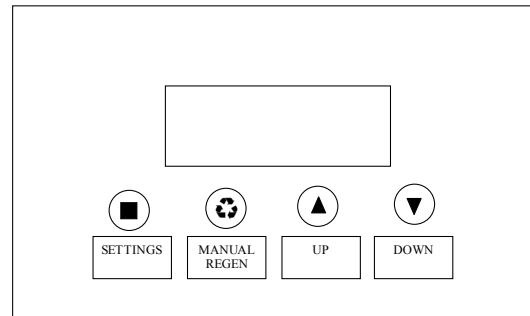
Bypass Position



System Start-Up

Key Pad Configuration

SETTINGS	This function is to enter the basic set up information required at the time of installation.
MANUAL REGEN	This function is to initiate an immediate or delayed manual regeneration.
DOWN / UP	Increase or decrease the value of the settings while in the programming mode.



Manual Regeneration (Step/Cycle)

DELAYED REGENERATION

Press and release the MANUAL REGEN button to set a delayed regeneration that will occur at the pre-set regeneration time (1:00AM). The main display will show DELAYED REGEN ON. To cancel press and release the MANUAL REGEN button. The main display will show DELAYED REGEN OFF.

IMMEDIATE REGENERATION

To start an immediate regeneration (or to step the valve through each position) press and hold the MANUAL REGEN button for 3 seconds (until it beeps). The valve will start an immediate regeneration. Press any key to skip to the next cycle after it begins to count.

Start-Up Instructions

1. Plug the power transformer into an approved power source. Connect the power cord to the valve.
2. When power is supplied to the control, the screen may display "INITIALIZING WAIT PLEASE" while it finds the service position.
3. Perform a manual regeneration (backwash). Manually perform a regeneration by holding the MANUAL REGEN button for 3 seconds. If the screen is locked press SETTINGS for 3 seconds to unlock. Open the inlet on the bypass valve slightly and slowly allow water to enter the unit. Allow all air to escape the unit before turning water on fully. Allow the unit to run complete backwash and rinse cycles.
4. Perform a second manual regeneration (backwash).
5. The valve will automatically advance to the SERVICE position after the regeneration is completed. Open the outlet valve on the bypass. Open the nearest treated water faucet and allow it to run until clear.
6. The valve will automatically advance to the SERVICE position. Open the outlet valve on 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.
7. Set time and date

Backwash Frequency

The table below can be used to help determine the frequency of regeneration for Carbon Filters (Taste and Odor). This table is a guide only since individual circumstances may require more or less regeneration frequency. This can be adjusted by the home owner to suit their individual needs with frequencies available from 1 – 99 days.

To prevent bacterial build up in the media, activated carbon filters should not exceed 6 days between backwashes.

To set a Neutralizing filter, follow the table under mild conditions

Sediment	Mild						Average						Extreme					
Taste Odor	Mild						Average						Extreme					
No. Of Persons	Days Between Back Wash (Regenerations)																	
2	6	6	6	6	6	6	6	6	6	6	6	6	4	4	4	4	4	4
3	6	6	6	6	4	4	4	4	4	4	4	4	3	3	3	3	3	3
4	6	6	6	6	4	4	4	4	3	3	3	3	2	2	2	2	2	2
5	6	6	4	4	3	3	3	3	2	2	2	2	2	2	1	1	1	1
6	6	6	4	4	3	3	3	2	2	2	2	2	2	1	1	1	1	1
7	6	4	4	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1
8	6	4	4	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1
9	4	4	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1
10	4	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1

Programming Instructions

Settings

Press SETTINGS key (3 SECONDS / BEEP)

VALVE MODE
B.W. FILTER

TIME OF DAY
12:01 PM

YEAR
2012

MONTH
AUGUST

DAY
21

REGEN DAYS
3 DAYS

GALLONS
OFF

REGEN TIME
12:00 AM

PROGRAMMING
COMPLETE

TIME OF DAY, YEAR, MONTH, DAY,

Time of day is for normal operation of system and the scheduling of the regeneration time. The date is used in a diagnostic function to track the last time the system regenerated.

REGEN DAYS

This value is the number of days between regenerations or back washes to clean the filters.

GALLONS

Default value is OFF. Adjust the GALLONS to set the capacity. This will cause the unit to regenerate either when the gallons remaining goes to zero or the days between regeneration is zero. Which ever occurs first.

REGEN TIME

This setting determines the time of day to perform a scheduled regeneration. The normal regen time for a filter is 12:00 AM.

About The System

Control Operation During A Power Failure

In the event of a 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 finish regeneration from the point it is at 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.

Main Display

The main display page will pause on the Date and Time page for 5 seconds. Then it will continually scroll through all of the system diagnostic display pages. Depending on the Valve Type some pages will not be displayed. To manually scroll through the diagnostics, press the down or up key. To reset the TOTAL REGENS, TOTAL GALLONS OVER RUN TOTAL, or PEAK flow rates, press and hold the MENU until the value changes to zero.

PARAMETER	DESCRIPTION
JULY/17/2012 8:30 PM	Month, Day, Year, Time
TOTAL 1,500 GAL REMAIN 1,200 GAL	The total amount is the system capacity when fully regenerated. The remaining is the capacity left in the system.
LAST REGEN 9/24/12	The date of the last regeneration.
TOTAL REGENS 10	The total number of regenerations.
TOTAL GALLONS 001590 GAL	The total amount of gallons treated by the system.
TOTAL 4 DAYS REMAIN 3 DAYS	The number of days remaining before regeneration. This option is only in filter mode.
OVER RUN TOTAL 0000 GAL	The total amount of water that has exceeded the system capacity over the last 4 regenerations. When remaining goes to zero, the gallons used will be added to over run total.
CURRENT 1.5 GPM PEAK 6.5 GPM	The current flow rate and the peak flow rate since the last regeneration.
DELAYED REGEN OFF	Advises whether a delayed regeneration has been scheduled manually or automatically.
REGEN TIME 12:00 AM	The current setting for regeneration time.
VALVE MODE B.W. FILTER	The current setting of the valve mode.

Regeneration Process

Periodically the filter will require a back wash to clean the trapped particles and unpack the filter bed to restore the system flow rates. The table below explains the regeneration steps.

Step	Name	Description
#1	Back Wash	Fresh water is introduced to the bottom of the tank flowing upwards expanding the filter media to rinse out any dirt or small particles to the drain and to uncompact the bed to restore full service flow rates.
#2	Rinse	Fresh water is introduced from the top of the tank flowing down through the filter bed rinsing any unfiltered water to the drain.

New Sounds

You may notice new sounds as your filter operates. The regeneration cycle lasts up to 30 minutes. During this time, you may hear water running intermittently to the drain.

Automatic Raw Water Bypass During Regeneration

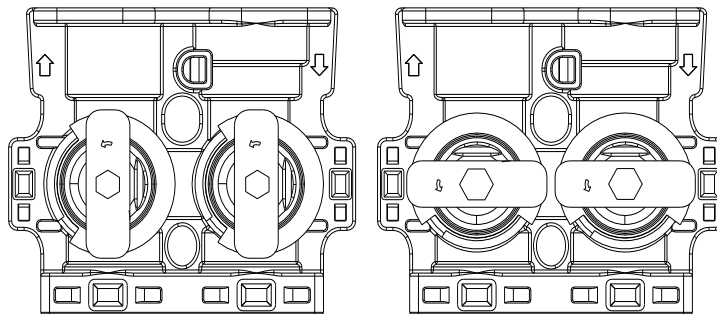
The regeneration cycle can last 30 minutes after which filtered water service will be restored. During regeneration, un-filtered water is automatically bypassed for use in the household. Hot water should be used as little as possible during this time to prevent un-filtered water from filling the water 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.

The pre-set regeneration time is 1:00 AM.

Manual Bypass

In the case of emergency you can isolate your water filter 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 filter, simply rotate the knobs counter clockwise (as indicated by the word BY-PASS and arrow) until they lock. You can use your water related fixtures and appliances as the water supply is bypassing the filter. However, the water you use will be untreated. To resume water service, open bypass valve by rotating the knobs counterclockwise.



SERVICE POSITION

BYPASS POSITION

System Configuration

Suggested Filter Valve Configuration	
Tank Size (Diameter)	Drain Line Flow Control (DLFC)
8"	#5 (3.5 GPM)
9"	#A (5.0 GPM)
10"	#A (5.0 GPM)
12"	#B (7.0 GPM)
14"	#C (10.0 GPM)
16"	none

Maintenance

Maintenance of your new water filter requires very little time or effort but it is essential. Regular maintenance will ensure many years of efficient and trouble-free operation.

1. Periodically make sure your pump is performing satisfactorily to ensure sufficient water is available for backwashing the filter.
2. Periodically test your raw and filtered water to ensure conditions are still the same for your original settings and that the unit is working the way it is intended to. Water testing is often the best way to determine when the filter media will require replacement.
3. Periodically check that the drain line is clear and free from any obstructions.

Care of Your System

To retain the attractive appearance of your new water filter, clean occasionally with mild soap solution. Do not use abrasive cleaners, ammonia or solvents. Never subject your softener to freezing or to temperatures above 100°F.

Replacing the Media Bed

Katalox Backwashing Iron and Sulfur Filter – Katalox media effective life is 8 to 10 years.

Birm Filter – Birm media effective life is 8 to 10 years.

Ph Neutralizer – The media bed in a neutralizing filter is slowly dissolved and has to be replaced. The frequency of replacement varies, depending on water quality - consult your dealer to determine the expected life of your media bed.

Carbon Filter (Taste and Odor) – Under normal operating conditions the effective life of the filter media is approximately one to three years, depending on the water quality, after which, taste and odor problems may return. When this happens, contact your dealer for a replacement media bed.

Installation & Replacement Filter Media Pak

Check to ensure all media parts are received.

The first step in replacing the media bed is to shut off the water supply to the filter. Then place the unit into the backwash position to release any pressure in the lines. At this point, you must disconnect the plumbing from the inlet and outlet. Then unscrew the control valve from the fiberglass tank. Once this has been done, remove the distributor tube. Then you can remove the filter media and two types of gravel from the tank. The quickest way to do this is by simply tipping the tank upside down into a large drum or pail. The tank must be rinsed out completely and have no media or gravel left in it at all.

Loading the Media (If not pre-loaded)

Ensure the distributor tube is seated in the tank fully. The top of the tube should be about even with the top of the tank. Temporarily plug the distributor tube with a plug or tape to prevent media from entering the tube during the process. It is important that the distributor tube is not moved once it is in place and the gravel and/or media are added.

Place a funnel over the media tank. A gallon milk jug with the bottom cut off will also work as a funnel. A second person should hold the funnel in place while adding the media in the following order.

Carbon Filter

1. Coarse Gravel
2. Carbon

pH Neutralizer

1. Coarse Gravel
2. Calcite
3. Mag Oxide

Katalox Backwashing

Iron and Sulfur Filter

1. Coarse Gravel
2. Katalox Media

Birm Filter

1. Coarse Gravel
2. Birm Media

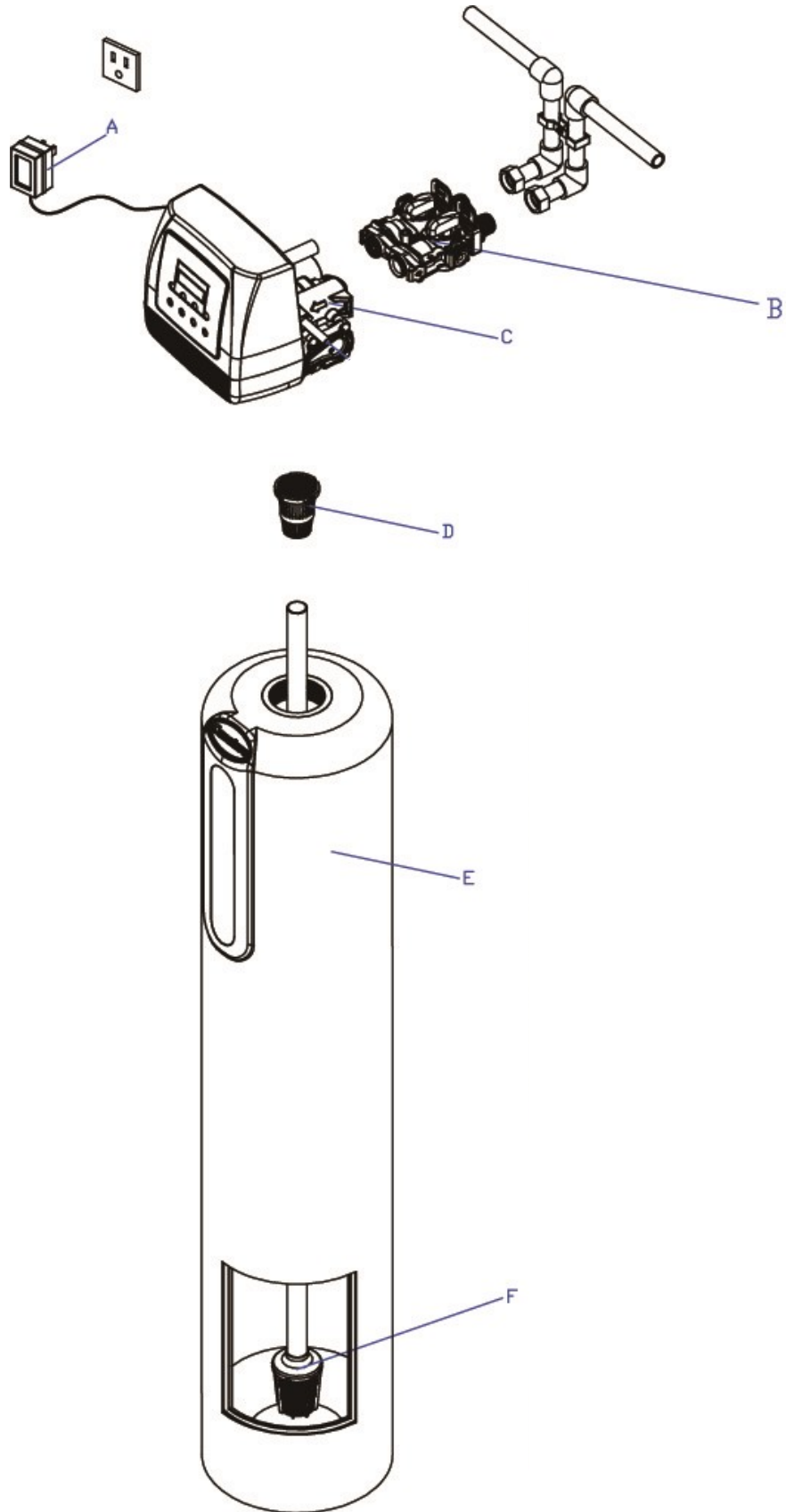
Once this is done, the rag or cork should be removed from the distributor tube. Clean off the top of the tank. Finally place the control valve on the tank and on to the distributor tube. Tighten the control valve on to the tank. Connect or reconnect the inlet and outlet and drain. The control valve should be in the backwash position. Slowly open the inlet valve water supply and slowly fill the filter tank until water appears at the open drain line. Return the control to the service position and shut the inlet off for approximately one hour to allow the media to soak in the water.

After one hour, turn inlet water on slowly and place the control into the backwash position and plug the unit's electrical cord into a constant power source. Let the unit continue through its regeneration cycle automatically. The regeneration is necessary so all media fines are backwashed down the drain to ensure clean filtered water.

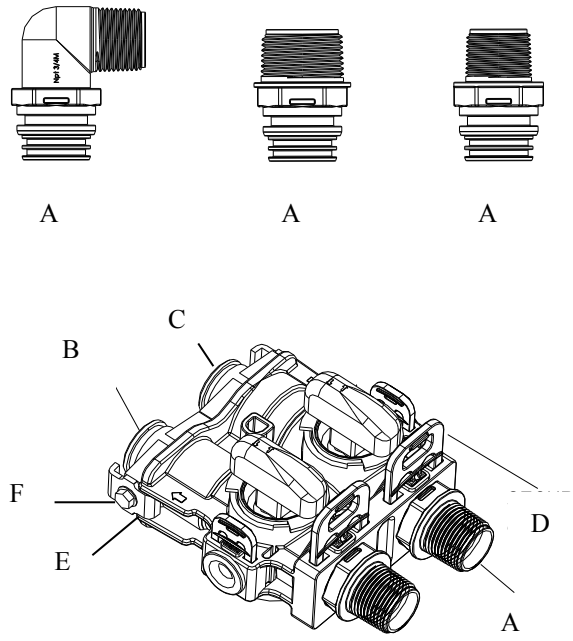
Main Repair Parts

REPLACEMENT PARTS - FILTER			
Replacement Part Number	Part Description	DWG #	Quantity
60010052	POWER TRANSFORMER 120V-12V	A	1
60010002	BYPASS / METER	B	1
10010063	GENESIS UP DOWN FLOW FILTER VALVE	C	1
60010048	TOP CONE	D	1
25020041	844 TANK (75)	E	1
25020042	948 TANK (100)	E	1
25020043	1054 TANK (150)	E	1
25010058	1252 TANK (200)	E	1
25030007	1465 TANK (300)	E	1
50010005	DISTRIBUTOR 1X54	F	1

Filter Exploded View

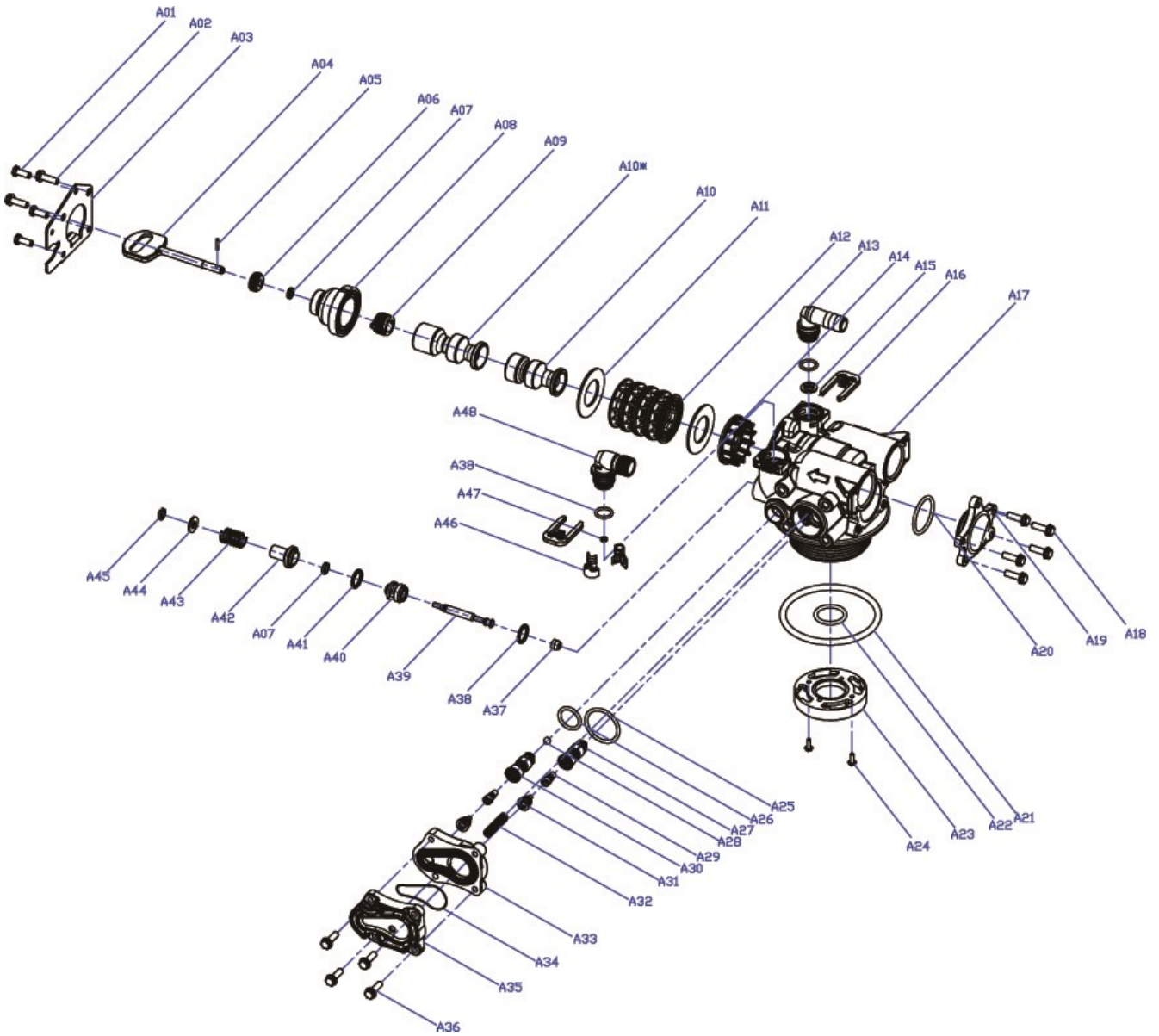


Main Repair Parts - Connectors



REPLACEMENT PARTS - CONNECTORS			
Replacement Part Number	Part Description	DWG #	Quantity
60010020	3/4" NPT ELBOW	A	2
60010019	1" NPT STRAIGHT	A	2
60010023	3/4" NPT STRAIGHT	A	2
60010079	VALVE COUPLING INLET	B	1
60010101	VALVE COUPLING OUTLET (METER SIDE)	C	1
60010025	PLASTIC SECURE CLIP	D	2
60010046	BYPASS SS CLIP	E	2
60010047	BYPASS SS SCREW	F	2

Control Valve Exploded View

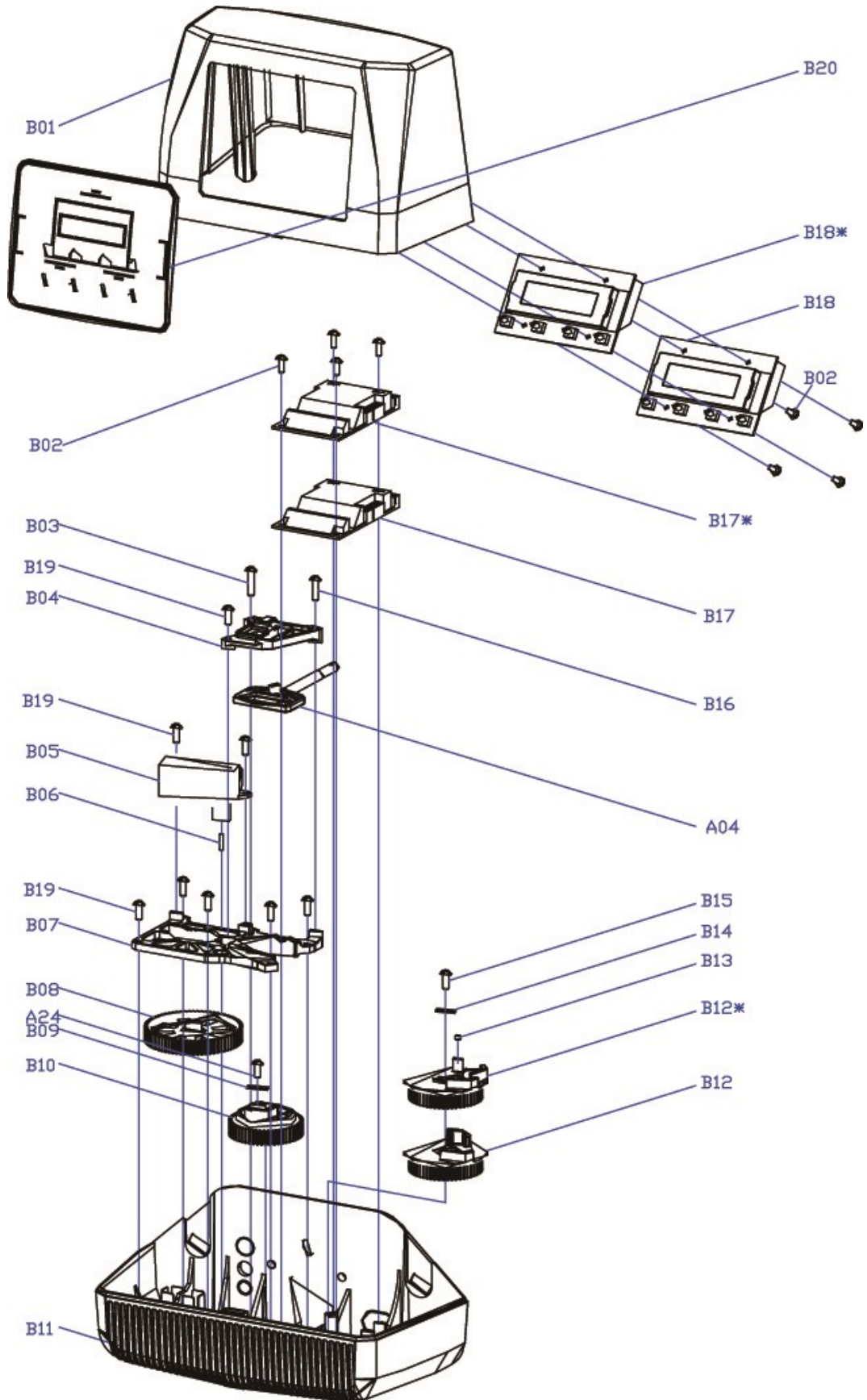


VALVE REPAIR PARTS LIST			
Replacement Part Number	Part Description	Replacement Part Number	Part Description
60010127	INJECTOR SET #0000 BLACK	60010129	85HE UPFLOW PISTON ASSEMBLY
60010126	INJECTOR SET #000 GREY	60010171	85HE DOWNFLOW PISTON ASSEMBLY
60010035	INJECTOR SET #00 VIOLET	60010130	85HE SEAL & SPACER KIT
60010034	INJECTOR SET #0 RED	60010131	85HE DLFC #1 1.5 GPM
60010033	INJECTOR SET #1 WHITE	60010132	85HE DLFC #2 2.0 GPM
60010032	INJECTOR SET #2 BLUE	60010133	85HE DLFC #3 2.4 GPM
60010031	INJECTOR SET #3 YELLOW	60010135	85HE DLFC #5 3.5 GPM
60010128	BLFC 0.2 GPM	60010136	85HE DLFC #A 5.0 GPM
60010110	BLFC 0.3 GPM	60010137	85HE DLFC #B 7.0 GPM
60010082	BLFC 0.7 GPM	60010138	85HE DLFC #C 10.0 GPM

Control Valve Parts List

GENESIS CONTROL VALVE (DOWNFLOW)				
Replacement Part Number	MFG Part Number	Part Description	DWG #	Quantity
	5056087	Screw-M5x12(Hexagon)	A01	3
	5056088	Screw-M5x16(Hexagon With Washer)	A02	2
	5056047	End Plug Retainer	A03	1
	5031016	BNT85HE Piston Rod	A04	1
	5056097	Piston Pin	A05	1
	5031015	BNT85HE Quad Ring Plug Cover	A06	1
	5056070	Quad Ring	A07	2
	5031011	BNT85HE End Plug	A08	1
	5031014	BNT85HE Piston Retainer	A09	1
	5057001	BNT85HE Piston(Electrical Downflow)	A10	1
	5056073	Seal	A11	5
	5056021	Spacer	A12	4
	5010082	Drain Fitting-B	A13	1
	5031005	BNT85HE Spacer	A14	1
	5056186	DLFC-2#	A15	1
	5056172	Secure Clip-s	A16	2
	5031002	BNT85HE Valve Body	A17	1
	5056508	Screw-M5x12(Hexagon With Washer)	A18	5
	5030004	BNT85 End Cover	A19	1
	5030013	O-Ring- ϕ 30x2.65	A20	1
	5056063	O-Ring- ϕ 78.74x5.33	A21	1
	26010103	O-Ring- ϕ 25x3.55	A22	1
	7060007	Valve Bottom Connector	A23	1
	13000426	Screw-ST2.9X13(Large Washer)	A24	2
	5031022	O-Ring- ϕ 32x3	A25	1
	5031021	O-Ring- ϕ 18x3	A26	1
	5031013	Injector Plug Body	A27	1
	30110007	Plastic Ball ϕ 6	A28	1
	30040089	Injector Throat	A29	2
	5031012	BNT85HE Injector Fixed Sleeve	A30	1
	30040090	Injector Nozzle	A31	2
	5056103	Injector Screen	A32	1
	5031003	BNT85HE Injector Cover Body	A33	1
	5031018	O-Ring- ϕ 40x2.65	A34	1
	5031004	BNT85HE Injector Cover Cap	A35	1
	5031027	Screw-M5x25(Hexagon With Washer)	A36	4
	5056075	Seal Mat	A37	1
	5056134	O-Ring- ϕ 12x2	A38	3
	5056054	Injector Stem	A39	1
	5056031	Injector Spacer	A40	1
	5056081	O-Ring- ϕ 12.5x1.8	A41	1
	5056030	Injector Cap	A42	1
	5056093	Injector Screen	A43	1
	5010049	Special Washer	A44	1
	5056105	Retaining Ring	A45	1
	5031010	BNT85HE BLFC Fixed Sleeve	A46	2
	5056076	BLFC-2#	A47	1
	5005629	Injector Fitting(3/8".Elbow)	A48	1

Power Head Exploded View



Power Head Parts List

GENESIS POWER HEAD (DOWNFLOW)				
Replacement Part Number	MFG Part Number	Part Description	DWG #	Quantity
	5056084	Screw-ST3.5X13	B01	10
	5010037	Screw-ST2.9X10	B02	9
	13000416	Screw-ST3.5X25	B03	1
	5031007	BNT85HE Piston Rod Guide Plate	B04	1
	5056510	Motor-12v/2rpm	B05	1
	5030014	Motor Power Cable		1
	11700005	Wire Connector		2
	5056098	Motor Pin	B06	1
	5031006	BNT85HE Mounting Plate	B07	1
	5030009	BNT85 Drive Gear	B08	1
	13000426	Screw-ST2.9X13(Large Washer)	A24	2
	5056139	Washer-3x13	B09	1
	5030007	BNT85 Main Gear	B10	1
	5030005	BNT185 Housing	B11	1
	5031017	BNT85HE Brine Gear(Downflow)	B12	1
	5010023	Magnet(3×2.7)	B13	1
	5056141	Washer-4x12	B14	1
	5056166	Screw-ST4.2X12(Large Washer)	B15	1
	5031016	BNT85HE Piston Rod	A04	1
	5010036	Screw-ST3.5X16	B16	1
	5031026	BNT85HE Main Pcb(Downflow)	B17	1
	5010031	Meter Assembly		1
	5010046	Meter Strain Relief		1
	5010029	Power Cable		1
	5010035	Power Strain Relief		1
	19010105	Wire Rope-3×100		2
	5031024	BNT85HE Display(Downflow)	B18	1
	5030021	BNT85 Wiring Harness		1
	5030003	BNT85 Cover	B19	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. Inadequate Backwashing Rate / Frequency or Change in Water Quality	1. By-pass valve open.	Close by-pass valve.
	2. Electrical service to unit has been interrupted	Assure permanent electrical service (check fuse, plug or switch)
	3. Quality of water has worsened	Have water sample analyzed to determine any change
	4. Filter not backwashing enough	Be sure control is not clogged or drain line restricted. Be sure water pressure has not dropped and that pump has sufficient capacity. Check that Backwashing Frequency is set for 3 Days.
	5. Leak between valve and central tube.	Check if central tube is cracked or o-ring is damaged. Replace faulty parts.
	6. Internal valve leak.	Replace valve seals, spacer, and piston assembly.
C. Low water pressure.	1. Inlet of control plugged due to foreign material.	Remove piston and clean control valve.
D. Filter media 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.
E. Valve continuously cycles.	1. Defective Circuit Board	Replace Board
F. Flow to drain continuously.	1. Foreign material in control valve.	Clean control.
	2. Internal leak.	Replace seals, spacers, and piston assembly.

Warranty

Discount Water Softeners, Inc. warrants that your new water conditioner is built of quality material and workmanship. When properly installed and maintained the system will provide years of trouble free service.

Seven Year Limited Warranty on Control Valve

Discount Water Softeners, Inc. will replace any part which fails within 84 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 is provided. If proof of purchase is unable to be provided the warranty period will be effective from the date of manufacturing.

Life Time Guarantee on Mineral Tanks

Discount Water Softeners, Inc. will provide a replacement mineral tank or brine tank to any original equipment purchaser in possession of a tank that fails provided that the water conditioner is at all times operated in accordance with specifications and not subject to freezing.

General Conditions

Damage to any part of this water conditioner or filter as a result of misuse, misapplication, neglect, alteration, accident, installation or operation contrary to our printed instructions, damage to ion exchange resin and seals caused by chlorine / chloramines in the water supply, or damage caused by any force of nature is not covered in this warranty. We will repair or replace defective parts if our warranty department determines it to be defective under the terms of this warranty. **Discount Water Softeners, Inc.** assumes no responsibility for consequential damage, labor or expense incurred as a result of a defect or failure.

