

Aquadyne^(C) Bead Filtration Systems

*Dive in and see what the future offers in no hassles,
no complaints low maintenance filtration.*

Never Clean Messy Filter Pads Again!

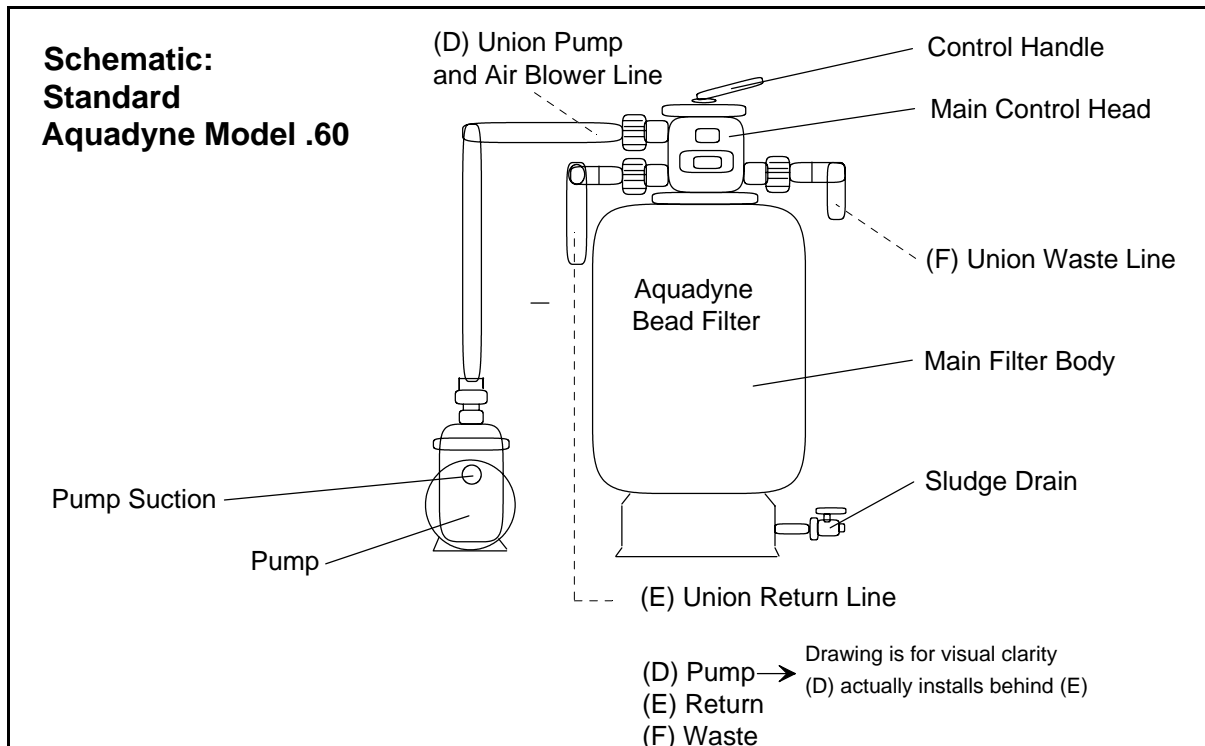
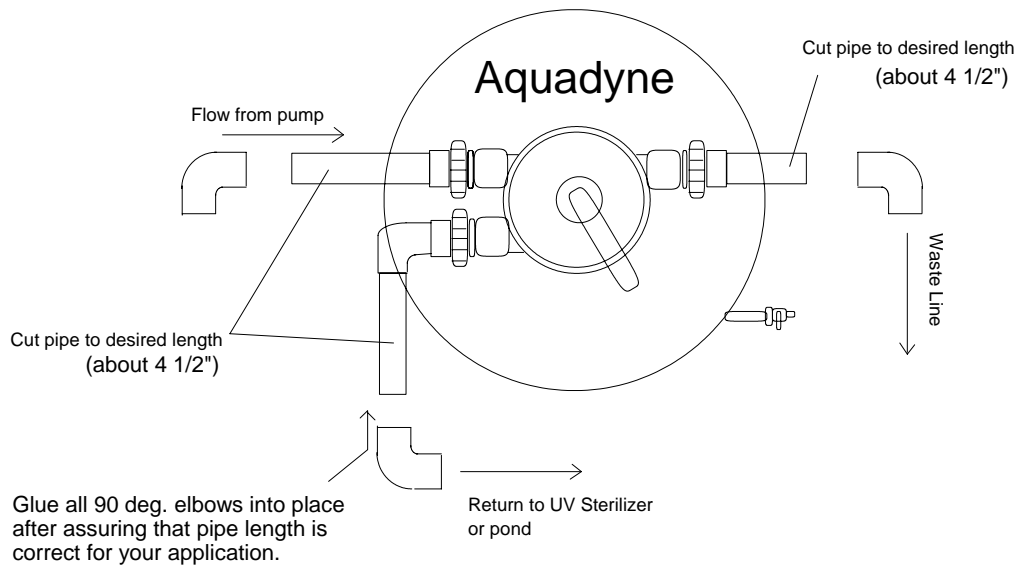
Assembly and Owners Manual

Model .60 and .60-B

Standard Union Manifold Setup Configuration

Beginning January 1st, 2005, all Aquadyne bead filtration systems will be shipped with specialized unions that do not require thread sealant, to simplify the installation and service of the filter systems. To complete the manifold you will need to supply 4 each 1 1/2" 90deg. elbows and 3 lengths of 1 1/2" pipe, each 4 1/2" long to get started. The pipes should glue up to allow the proper placement of the pump just beside the filter. We recommend that you dry fit your control head plumbing first to be sure that the manifold pipe positioning is satisfactory to your particular plumbing needs. European metric units are shipped with metric conversion unions.

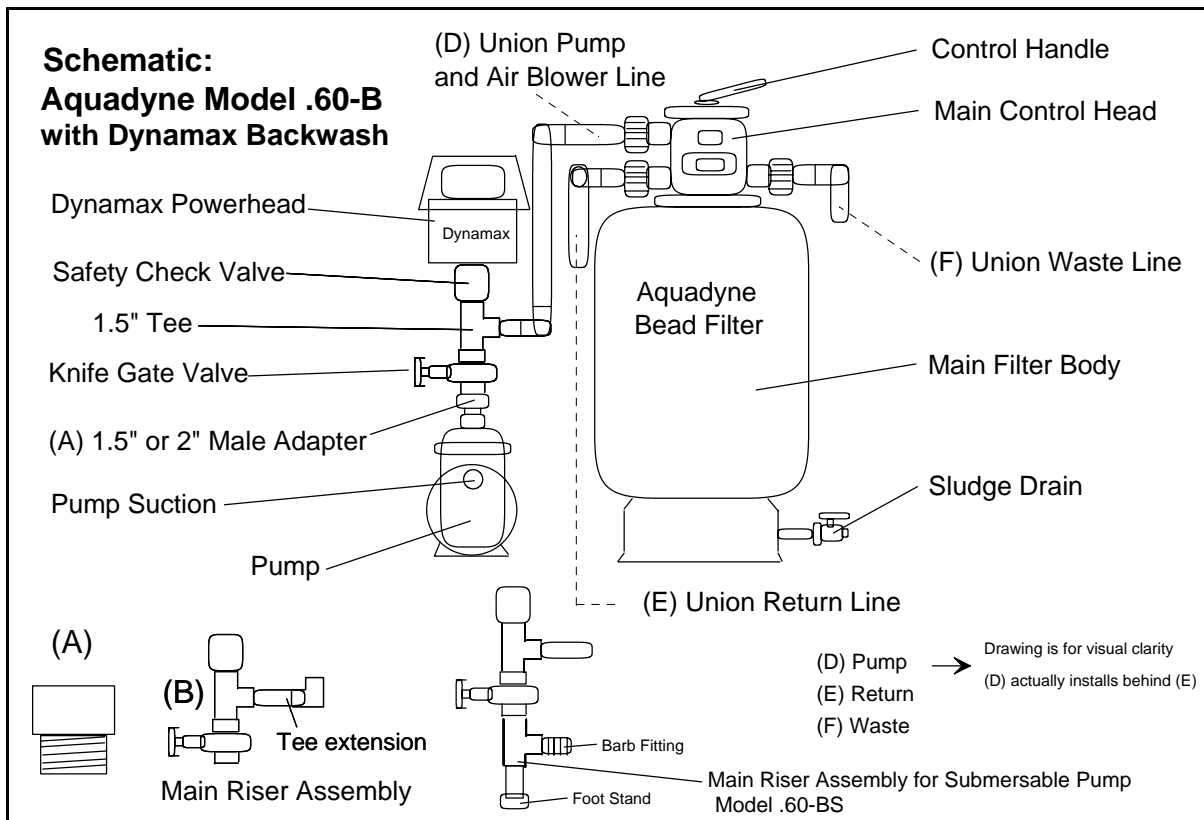
Overhead View



Aquadyne Assembly and Installation Guide: Model .60-B

The Model .60-B is the latest adaptation of the Dynamax air backwash, to our smaller bead filter systems. The Model .60-B is the most dynamically superior bead system on the market in its size class. Dynamax improves the performance capacity of the Model .60 to a maximum pond size of 1500 gallons and 45 pounds of fish load.

1. Screw the supplied 1.5" male adapter (A) into the top discharge of your external pump. (Not included for metric.)
Use an ample amount of liquid teflon thread sealant to threaded connectors and snug tightly.
2. Glue the Blower Riser Assembly (B) into the male adapter mounted on the pump discharge with the 1.5" Tee facing right at a 90deg. angle to the pump and towards the filter.
Before gluing slip the two components together to be sure that the Knife Gate Valve does not interfere with the removal of the strainer basket lid of the pump. If it does, use a longer piece of pipe between the male adapter and valve to allow for clearance.
3. Install the Dynamax blower (C) onto the blower riser assembly (B) **DO NOT GLUE**.
The Dynamax blower does not need to be permanently attached to the riser.
4. Assemble the filter unit according to the instructions on the page entitled **Main Filter Body Assembly**.
5. Now screw in the 3 union assemblies (D), (E), and (F), into the main control head. Use the supplied "O ring" lubricant to the O rings, and screw the fittings into the control head, snugging them just past hand tight. **DO NOT OVER TIGHTEN**. These fittings can always be retightened later with pliers or similar tools.
6. Place the completed pump and blower riser assembly next to the filter body. Measure the length of pipe necessary to connect (D) to the Tee extension on the blower riser assembly.
If necessary, cut the pipe to length and glue into the upper union pipe (D) first, (loosen the union and swivel the 90deg L to make alignment easier) then glue the lower end of the pipe into the Tee extension. Assembly is complete. Attach the suction line from the pond to the pump, and the return line to the pond return line. Refer to the operating instructions for operational procedures. Most units are shipped with preassembled risers for your convenience. European metric units do not include part (A). However the Knife Gate Valve union is metric 63mm.



Main Filter Body Assembly - Models .60 and .60-B

Unpacking and Installation Instructions

Refer to the Schematic Diagrams for a Visual Reference

1. First unpack the main filter tank and remove the two neck seal clamp ring bolts.
(If you ordered a 2.2 or larger, it is likely that the head and tank are packed separately.)
2. Next Remove the control head and column.
3. Remove any plumbing shipped inside the tank. (parts may vary with your model)
4. Screw the sludge drain into the fitting in the bottom of the tank, through the hole in the base. Teflon tape has already been applied to the threads for you. Be sure the sludge valve is in the closed position.
5. Position the main filter body in a level location of your choosing. Most filters fit well on (6) 12 x 12 concrete paver stones from the local depot or hardware store if you do not have a prepared surface. Models .60 and .60-B fit well on 4 paver stones.
5. Fill the main tank almost half full of water and pour in all of the the beads included in your filter. The water will float the beads enough for you to re-insert the head and column into the tank.
6. Lubricate the large O-ring that seals the control head to the tank and re-insert the control head and column into the tank and position the head to best suit your plumbing needs. Lubricate the O-ring with Vaseline, Crisco, or other O-ring lubricant.
7. Re-attach the neck clamp ring and tighten hand tight with a screwdriver.
8. The drawing clearly indicates where you will attach the pump line, return line, and waste line. Be sure not to over tighten the union couplings, for easy removal later.
9. The waste line need not be glued in unless you prefer. Simply run a short section of pipe from the waste fitting several feet or further away from the filter to prevent washing around the filter. The bottom sludge drain need not be plumbed any further, as you will only be opening the drain for 5 seconds or so at a time.
11. Once you have completed the main tank assembly, install your pump next to your filter according to the visual diagrams provided. The pump plumbing will vary depending on whether you have the model .60 or the model .60-B. Now you are ready to start your system.

Read Operating Instructions Before Proceeding.

Starting your Aquadyne .60 or .60-B for the first time:

1. Be sure that the Knife Gate Valve is in the open position. (Handle Pulled Out [model 60-B only])
2. Open the leaf trap and fill the reservoir with water. It is recommended that you install a “swing check valve” in the suction line to speed the priming process. See “Creative Plumbing”
3. Switch the pump to “High” speed (disregard for single speed pumps).
4. Set the “Main Control Head” on “Rinse” and wait for a steady stream of water from the “Waste Line”. This will rinse residual impurities such as manufacturing dust from the filter. Allow to run for about 30 seconds.
5. Then switch the pump to low (if applicable), and set the “Main Control Head” to “Filter”. Allow your filter to run for a full week before backwashing for the first time.

It is hard to resist wanting to backwash your filter, especially for the first few times. However, it is important that fish waste and other debris be allowed to accumulate in the filter media so that the beneficial biological bacteria can establish a healthy colony.

Backwashing your Aquadyne .60 for the first time:

The big day is finally here! It is time to backwash your .60-B for the first time.

1. With your motor running, change the control head position to Backwash.
2. Switch your 2 speed motor to “high” speed.
3. To speed the debris removal from the filter it may be necessary to rotate the main control head back and forth between backwash and rinse two or three times with the main pump running. **Do not allow the handle to cross over the “closed” position while performing any control head position changes while the pump is running. Damage may occur.**
4. Once the discharge begins to run clear from the backwash cycle, switch the control head to the rinse position. The water will run clear in a few seconds. Once clear, switch the pump back to low speed and return the control head back to the filter position.
5. After backwashing, always open the sludge valve located at the bottom of the filter for a few seconds to purge any heavy solids from the bottom of the tank. **Opening the sludge valve during the backwash cycle is not recommended. You may lose bead media through the sludge valve during the backwash cycle.**

Backwashing is recommended weekly. With the Dynamax you can go 2 weeks and longer!

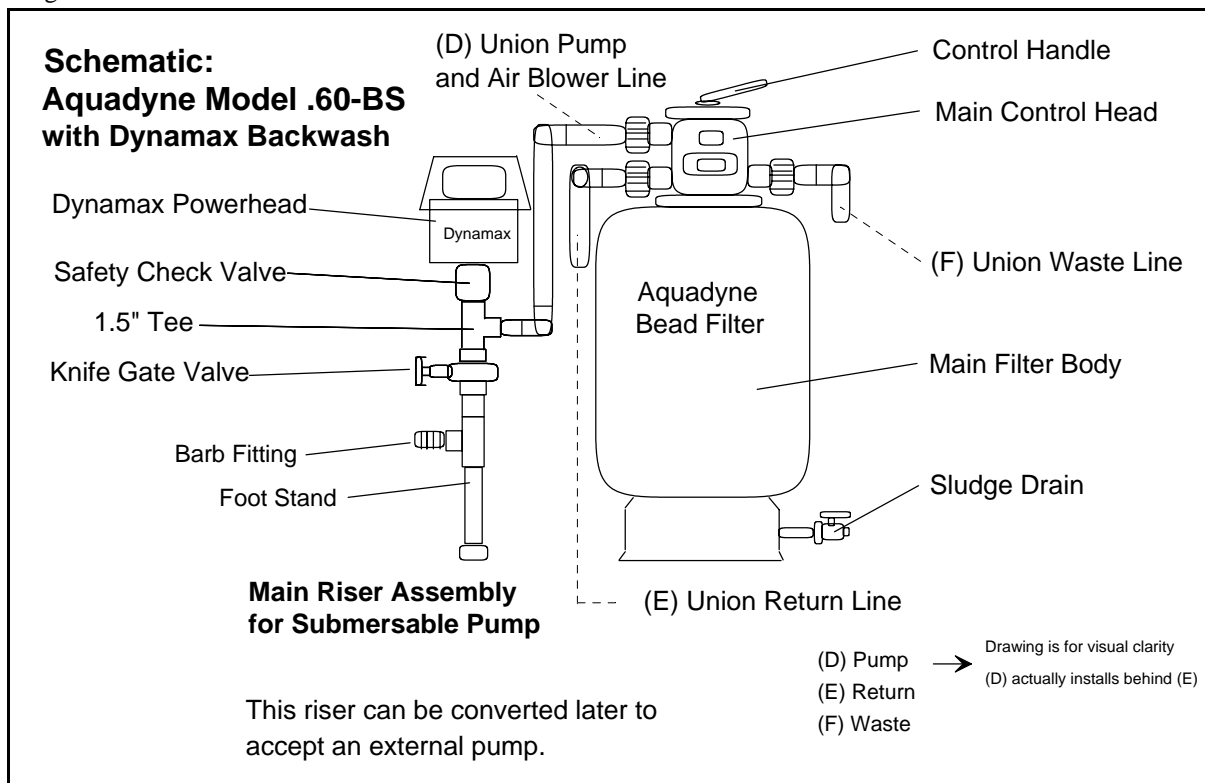
Backwashing your Aquadyne .60-B for the first time:

The big day is finally here! It is time to backwash your .60-B for the first time.

1. Unplug or switch off your main pump motor.
2. Set the "Main Control Head" on "Rinse".
3. Push the Knife Gate Valve handle completely in to prevent blower air from escaping through the pump.
4. Plug in or turn on the Dynamax blower unit and allow it to run for 2 minutes. First there will be a small amount of water discharge from the "Waste Line", followed by a steady stream of air. You can put your ear to the main tank body and you should hear a violent swooshing of the bead media inside, as well as a noticeable vibrating of the main tank body. If not, see note below.
5. Unplug or switch off the Dynamax power head and re-open the Knife Gate Valve.
6. Set the "Main Control Head" to "Backwash" and plug in or switch on the main pump. (switch to high on 2 speed pumps) After a moment of hesitation (re-priming) there will be a discharge of waste from the "Waste Line". Once the discharge begins to clear, set the "Main Control Head" to the "Rinse" position for 5 to 10 seconds, then return the control head back to the "Filter" position. (and reset the pump speed to low on 2 speed pumps). This completes your first backwash! Future backwashings are always performed in the same manner, except after about 4 washings, you can loose the manual.
7. After backwashing, and returning the control head to the filter position, always open the sludge valve located at the bottom of the filter for a few seconds to purge any heavy solids from the bottom of the tank. **Opening the sludge valve during the backwash cycle is not recommended. You may loose bead media through the sludge valve during the backwash cycle.**

Backwashing is recommended weekly. With the Dynamax you can go 2 weeks and longer!

NOTE: If you do not have a large volume of air escaping the waste line from the Dynamax when running, or you can not hear a violent stirring of the bead media when placing your ear against the tank, try rotating the main control head back and forth between backwash and rinse 2 or 3 times with the main pump running, BEFORE switching to the Dynamax mode. This will free any debris that is stuck on the waste line slots of the main column and allow free passage of both air and waste.



Aquadyne .60 and .60-B Control Head Functions:

Congratulations on your assembly of the Aquadyne Bead Filter. You are now ready to enjoy one of the most maintenance free and well supported biological and mechanical filtration systems ever produced.

First lets get acquainted with the features of the main control head.

The **“Filter”** position is used for the normal flow of water through the filter system.

The **“Backwash”** position is used to backflush waste and debris from the filter.

The **“Rinse”** position is used to pre-rinse the bead media prior to returning to the filter mode, which prevents the return of any harmful debris back to the pond environment.

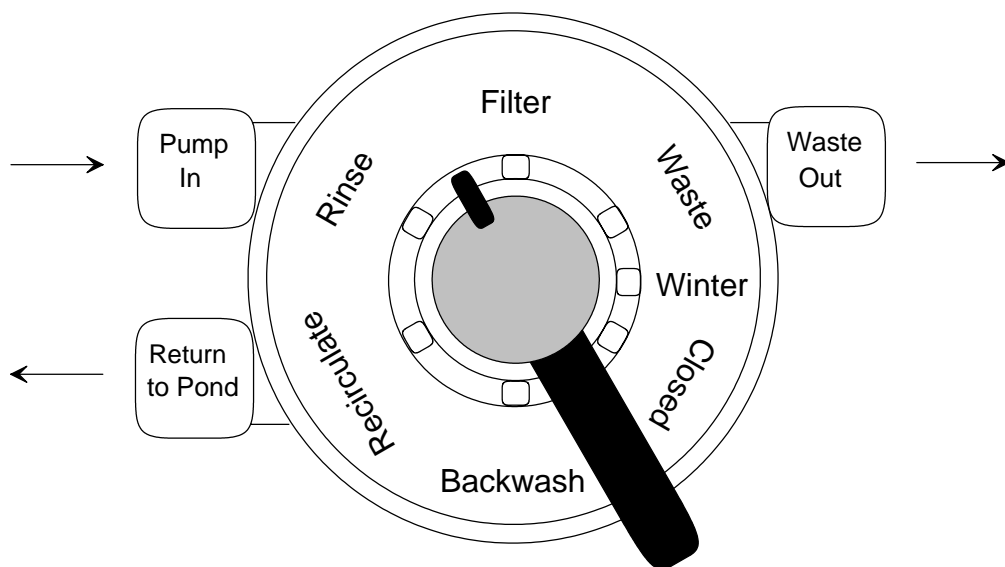
The **“Rinse”** position is also used to vent air from the Dynamax blower when it is in use.

The **“Recirculate”** position is used to bypass the normal flow of water away from the filter media while maintaining pond circulation. This is beneficial when medicating the pond with agents that may be harmful to the beneficial bacterial colonies which reside in the bead media.

The **“Waste”** position also bypasses the filter media. Water flows from the pump, through the control head and out to waste. This position can be beneficial to diagnose any water flow problems, or to simply drain the pond. It can also be used to discharge vacuum waste, if you attach a vacuum hose to your pump suction.

The **“Closed”** position stops all flow of water through the control head. This position has little use except in a case where the filter is installed below the water level, it will function as a shutoff valve to prevent water backflowing through the pump strainer basket if the lid is removed. **If you change control head positions while the pump is running, and the handle accidentally slips into the closed position, damage may result to your filter.** While it is acceptable to change the control handle position while the pump is running, always rotate the handle in a direction away from the closed position.

The **“Winter”** position is a raised notch which opens all ports of the control head and allows water to drain from the control head and column to prevent freezing and damage. The bottom sludge drain must also be slightly opened to allow water to drain from the main tank body and internal column.

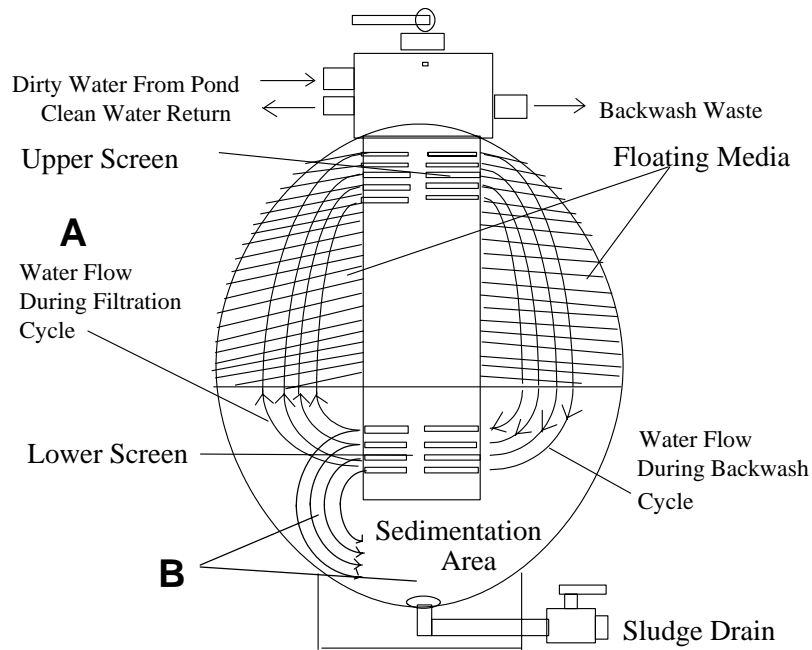


Aquadyne *Bead Filtration Systems*

The Worlds First Perfect Bead Filtration System

- * POWER BACKWASH
- * BOTTOM SLUDGE DRAIN
- * 5 MINUTE DISASSEMBLY
- * MICRO SEDIMENT REMOVAL
- * ADVANCED BACKWASH
- * COMPLETE MEDICAL BYPASS
- * 6" INCH TANK OPENING
- * INTERNAL SEDIMENT AREA
- * FULL RINSE CYCLE
- * FULL INTERNAL ACCESS
- * ONE TOUCH OPERATION
- * NO FLOW RESTRICTIONS

Internal Layout and Operational Design



During the filtration cycle, water flows upward (See A) through the bead media exposing the ammonia and nitrite laden water to billions of beneficial nitrifying bacteria which grow on the surface areas of the bead media. At the same time the bead media is capturing fine particulate matter such as fish waste and other light particles and allows clean water to return to the pond. Heavy waste particles such as mud and large waste debris to settle into the bottom of the main tank (See B) in the sedimentation area.

During the backwash cycle the water flow is reversed and the beads are decompressed from their packed state in the filter cycle. Gravity, together with forced water flow causes the waste and debris to be backwashed out of the media and washed out the lower grate screen to the waste line. As the water begins to clear up in the waste water sight glass, you will reposition the control handle to the rinse cycle. This will rinse any remaining debris from the top of the media. As soon as the sight glass runs reasonably clear in the rinse cycle, you simply return the control handle to the filter position and you are finished.

Draining Your Pond and Water Changes:

Typically, the backwashing process will discharge enough water over a couple of backwashings to satisfy your water change needs. However, if you need to remove large sums of water from your pond for cleaning or other purposes, simply rotate the control head handle to the WASTE position and the pond water will be drained to waste without passing through the filter as long as the pump or suction line is under water. It is not a good idea to drain your pond in the backwash cycle, as it will cause excessive loss of beneficial bacteria from bead friction.

Medicating Your Pond:

At times it may be necessary to add medications to your pond that will harm the beneficial bacteria in your biological filter. In this case you will simply position the top control handle to the RECIRC. position. Always perform a BACKWASH cycle before closing off your filter from circulation. This will clear the filter of waste and prevent it from becoming septic. Before returning the filter to normal operation, backwash the filter again to discharge any septic water that may have formed in the filter while being bypassed. RECIRC. allows the water coming from the pump to bypass the filter completely and recirculate to the pond without passing through the filter media, and thus not killing the biological capacity of your filter. The beneficial bacteria should be able to survive in the closed system for many weeks. When you return your filter to normal operation after an extended period of medicating, the capacity of the filter may be stunted for a short time, but should catch back up with the demand of your pond within a couple of days. Always perform a 50% water change after medicating your pond.

Winterizing Your Filter:

Many people find it necessary to shut their pumps off in the winter time. If this is the case you will need to winterize your pump and filter system. First, perform a complete backwash cycle and shut your pump off. Next, drain the main tank by placing the main control head in the "Winter" position and open the sludge drain and allow the water to trickle out. **Do not** open the sludge drain fully and leave the filter unattended or the bead media will surely run out of the tank. However, it is acceptable to open the sludge drain fully to accelerate the draining process if you are there to close the valve to a trickle at the first sight of beads escaping. You may remove the winterizing cap if you wish. However, due to the sludge drain being post factory installed lower than the original winterize cap, the cap no longer serves as a necessary component of the filter. Again, **do not** fully open the sludge drain valve to drain the tank water unattended as the beads will wash out by the hundreds. Once the tank is drained leave the valve cracked just a little to prevent any water from freezing in the pipe. Do not be alarmed if on occasion you loose a few beads from the sludge lower waste drain. This is normal as on occasion some beads will be trapped in clumps of waste that will discharge through the drain. You could loose several pounds of beads from most sizes before you ever affected the filters biological capacity. Replacement beads are available if you should ever want to top off your filter, but be cautious not to add more than the specified weight for your filter, as the filter has been designed to function properly with a specific quantity of beads.

Bead Capacity Minimum by Depth Measure:

Models .60 and .60-B --- 8.5 inches
Models 2.2 and 2.2-B --- 13.5 inches

Models 1.1 and 1.1B --- 10.5 inches
Model 4.4 --- 15.5 inches

Bead depth can be measured by two methods. #1 remove the control head and drain the main tank as if winterizing. Once the water is removed, simply insert a measuring device to the bottom of the tank and measure.

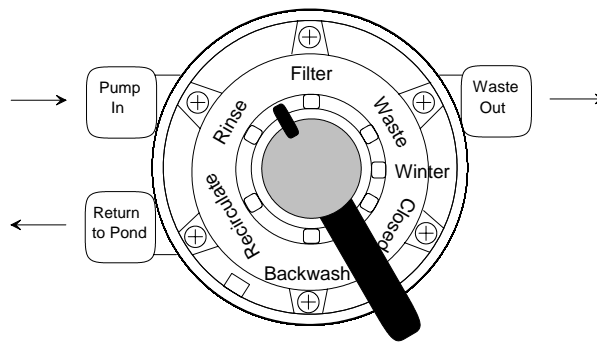
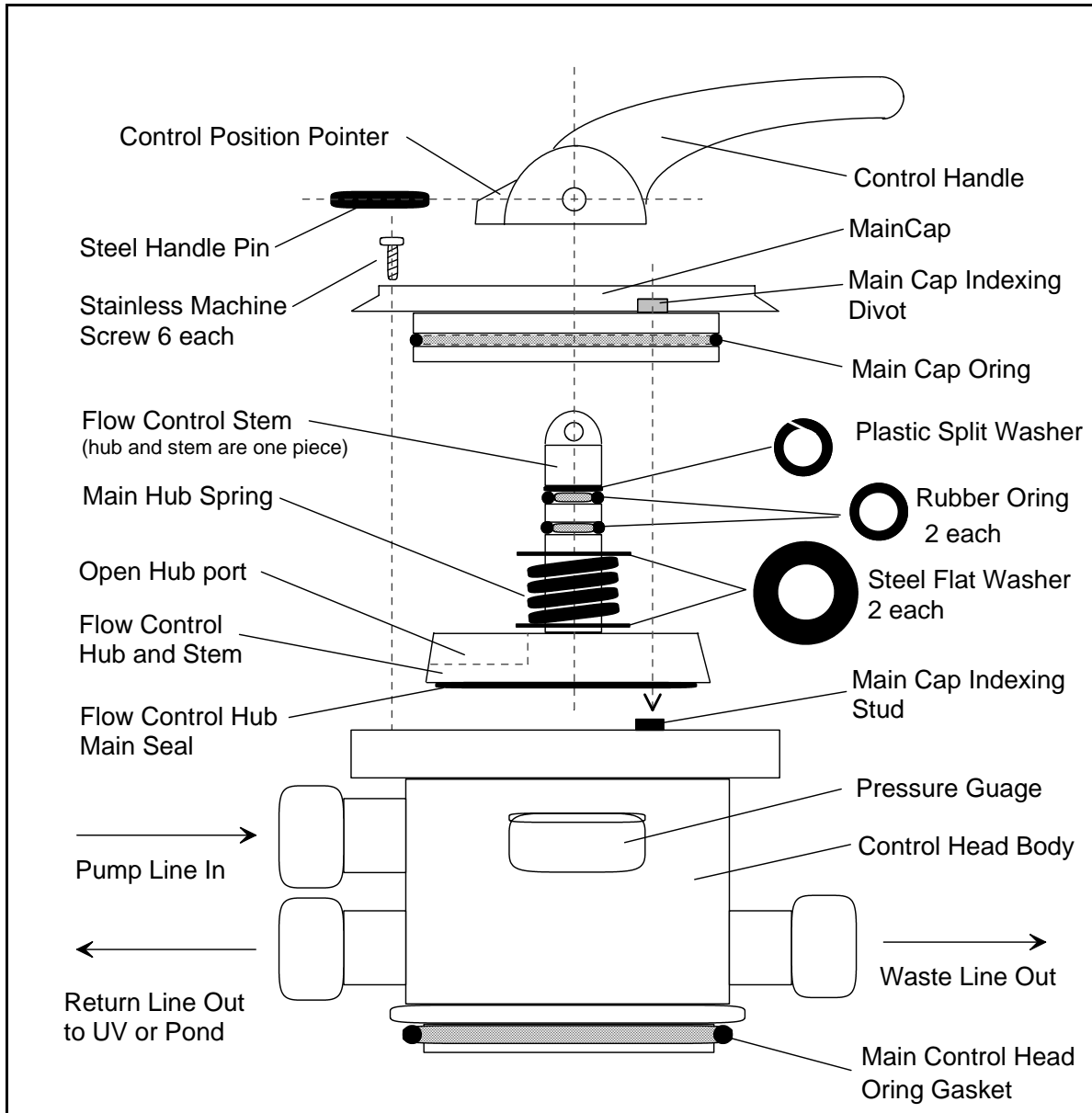
#2 Remove the control head from the main tank and fill the tank with water until the beads float 2 to 3 inches below the tank opening. Insert a measuring device and reach into the beads and guide the end of the measuring device level with the bottom of the floating bead media. Take the bead depth reading from the surface of the media at the tank opening.

Vacation

If you plan to be away from your pond for an extended period of time, there is no need to worry about backwashing your filter while you are away unless your pond is heavily stocked and requires more frequent cleaning. The filter is designed so that there is little resistance to water flow through the media and diffuser column. If you are normally backwashing once per week and not getting an extreme amount of dirt waste from the filter, you can leave you filter running for three to four weeks unattended, depending on the filter size and fish load, but you will want to perform a very good backwash upon returning to assure that the filter is clean.

There is a word of caution: When leaving your filter for long periods of time (weeks), be sure to buffer your pond water. The Aquadyne filter together with the decomposition bacteria in your filter are so efficient that a pH shift may occur if your water is not buffered.

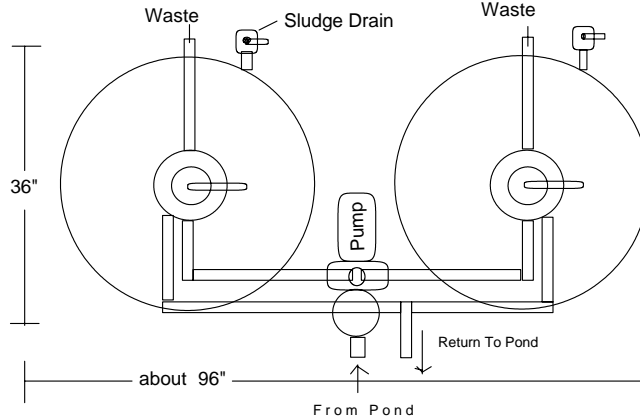
Control Head Parts Layout



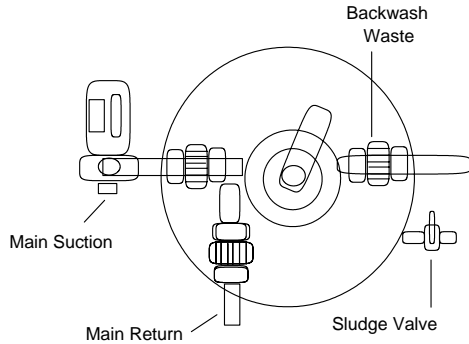
Creative Plumbing Solutions

The benefit of the tandem plumbing of more than one Aquadyne system on a single facility is two fold. First, and most evident is the fact that you can double the filtration capacity of any system by running tandem units. Aquadyne can accommodate any size body of water by simply using multiple systems plumbed together. ie: single tandems, double tandems, triple tandems, or even quad tandems for facilities over 100,000 gallons capacity. The second benefit of running tandem systems is most beneficial for quarantine systems or holding facilities, where high fish loads can be supported, and medicated without the fear of losing total filtration. Also, when using tandems, there is mechanical redundancy. If for any reason one filter has a mechanical problem, the other can carry the system until repairs are made to the down system. Inset diagrams include external pumps, however higher volume submersible pumps are acceptable as long as the water flow rates are appropriate.

Dual Aquadyne 4.4 Installation Diagram For Ponds to 28,000 Gallons

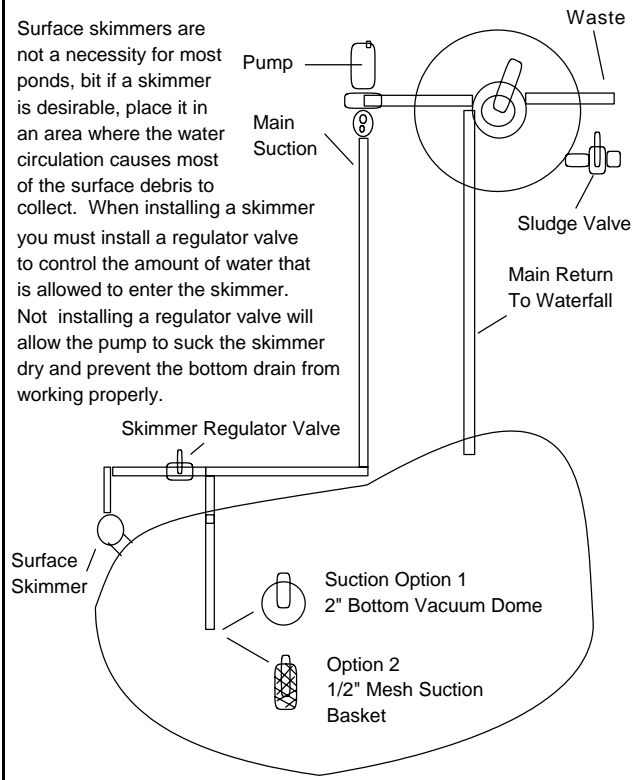


Main Control Head Plumbing Detail



Aquadyne Single Tank Plumbing Reference

Surface skimmers are not a necessity for most ponds, but if a skimmer is desirable, place it in an area where the water circulation causes most of the surface debris to collect. When installing a skimmer you must install a regulator valve to control the amount of water that is allowed to enter the skimmer. Not installing a regulator valve will allow the pump to suck the skimmer dry and prevent the bottom drain from working properly.



Filter Care and Maintenance

While typically you can expect to receive a lifetime of trouble free service from your Aquadyne system, there are a couple of service related procedures that you may wish to perform over the years, although for the most part, there are no major service concerns related to the systems.

1. Rubber O-ring Lubrication may be necessary if the main control handle becomes difficult to reposition. Over the years the factory lubrication may dry out on the two small o-rings located on the flow control stem which require lubrication. To perform this procedure, first use a pin driver to remove the Steel Handle Pin from the Control Handle. (A pin driver can be any blunt steel rod which has a smaller diameter than the rod itself, which can be driven through the control handle.) Next remove the Stainless Machine Screws or bolts which hold down the Main Cap to the Control Head Body and remove the Main Cap assembly from the control head body. Grasp the Main Cap in one hand and the Flow Control Hub in the other and twist while pulling them apart from each other. This will expose the two rubber o-ring located on the Flow control Stem. Lubricate the two o-rings liberally with a silicone based or similar o-ring lubricant. It is not necessary to remove the o-rings from the stem unless they are leaking or broken. If it is necessary to remove the o-rings, remove the lower o-ring first, being careful not to scratch or gouge the inner surfaces of the o-ring seat with a sharp object. Then remove the upper o-ring and split washer. When reinstalling the o-rings, replace the upper o-ring and split washer first and the lower o-ring last. At this time, remove, clean, and lubricate the Main Cap O-ring before reassembly. Re-insert the Main Stem and Hub assembly into the Main Cap and be sure that the Open Hub Port in the Main Hub is aligned with the Filter Position indicated in writing on the Main Cap label. Insert the re-assembled Main Cap assembly into the Control Head Body, being sure to align the Main Cap Indexing Divot with the Main Cap Indexing Stud on the Control Head Body. Re-insert the Stainless Machine Screws or bolts into the Main Cap and hand tighten in a cross over pattern as you would the lug nuts on an automotive wheel. This will assure a uniformly seated Main Cap assembly. Place the Control Handle onto the Flow Control Stem with the Control Position Pointer facing the Filter Position indicated in writing on the Main Cap label. If the Open Hub Port and the Control Position Pointer are not aligned in this fashion the filter will not work properly when returned to service. Lastly, re-insert the Steel Handle Pin into the Control Handle and drive it flush on both sides. If you ever experience a leak from between the main control head body and the filter tank it is likely that the Main Control Head O-ring Gasket either needs lubricating or replacing. The Flow Control Hub Main Seal is a permanent seal which is molded into the Flow Control Hub and Stem assembly on models .60 through 2.2-B with 1 ½ inch control heads. No lubrication or service is necessary on this seal. If this seal is ever cut or damaged, simply replace the Flow Control Hub and Stem Assembly.

2. Replacement Parts are available for all filter models factory direct as most dealers do not stock replacement parts due to the fact that out of thousands of filter sales, there have been so few replacement parts ever requested. The most requested replacement part is the Main Control Head O-ring Gasket and the Main Cap O-ring.

It is the policy of Aquadyne to make available non-warranted or warranty-waived replacement parts at factory cost plus shipping. It is our desire to make your Aquadyne experience as trouble free and future cost effective as possible.

Aquadyne filters are warranted for life to the original purchaser of the filter. This warranty covers the control head body, the Aquadyne central diffuser column, the main tank body, blower riser, and sludge drain components. This warranty DOES NOT include damage resulting from freeze, misuse, mishandling, rubber or electrical components. However, the above statement holds true in all occurrences.

Questions Most Asked

Over the past year I have been asked a set of questions that seem to be repeating themselves, so I thought I would answer them for you ahead of time. So here they are in advance, with answers that you can sink your teeth into.

Q: We have clear water, but the fish swimming around the bottom, keep sediment particles floating around in the pond which cloud the water and never seem to go away.

A: One of the wonderful benefits of the Aquadyne systems is that they will remove all of those micro-fine particles from your pond water. After your Aquadyne filter cycles (when the beneficial bacteria is established), the bacteria creates a thin bacterial colony on each and every one of the thousands of beads. This bacteria is Nitrosomonas and Nitrobacter, which consumes the Ammonia and Nitrite waste that your fish produce, These bacteria also serve another purpose as well. If you have ever seen a Sea Anemone, they have small finger like fronds that extend out to grab particles of food from the ocean. In much the same way by comparison, the bacteria will trap the very fine particles that are floating around in your pond and cause the particles to stick to the bacteria coated beads, where it stays until you backwash it off.

Q: How often do you have to clean the Aquadyne system?

A: The Aquadyne system should typically be backwashed about once per week. If you have a heavy fish load in your pond, you may need to backwash twice weekly. Either way, the typical backwash cycle takes less than five minutes, and you never get your hands wet.

Q: Can you over backwash the Aquadyne system?

A: Yes you can. The aquadyne system needs to be backwashed as little as possible for it to function properly, yet you don't want to wait weeks between washings. If you backwash the system too often, you can cause excessive damage to the bacterial colonies that are growing on the beads. During a backwash the beads rub together as they release the dirt and debris that they have trapped on their surfaces. If you backwash too often, the dirt and debris will not have a chance to thicken on the beads surface for optimal filtering. Also, if the filter is left in the backwash position for longer than is necessary to discharge the waste products, the rolling of the beads that is going on inside the filter can actually kill or severely stunt the bacterias effectiveness to consume waste for a short time. If you need to drain your pond for any reason, do so with the control handle in the WASTE position. This will drain your pond to the intake level of your pump or foot valve, without passing the water through the filter media.

Q: What happens if you do not backwash the Aquadyne system for up to a month?

A: Due to the design and size of the Central Diffuser Column, it is virtually impossible for the filter to get so clogged that the water flow would actually stop. If the filter system did clog and the media was completely full of debris, the water would side slip the central diffuser column and exit the filter, bypassing the clogged media and avoiding pump damage. All other bead systems on the market use small transfer and diffuser tubes inside their bodies, which number one, cause flow restrictions (whether they admit it or not), (remember the fuzzy logic of friction loss in small piping). The central diffuser column in the Aquadyne is a whopping 6 inches, with no restricting elbows of any kind in the filter chamber. And number two, many of the other systems have a maximum operating pressure of only 15 PSI. What good is that if your filter clogs. Even most weenie pumps that would operate a bead system can pump over 15 PSI when dead headed. The result is that you will blow the spin welded fittings out of the ends of other polyethylene filters. All models of our Aquadyne systems have a whopping 50 PSI pressure rating

from the factory and no “spin welded” fixtures. Even our Sludge Valve bulkhead is schedule 80 PVC (overkill!) By example of pressure, the flow restriction of the Aquadyne system is so low that you would have to use a pump of several horsepower to attain anything close to 50 PSI. If your filter runs for a month without a backwash, you can with every confidence, perform an advanced backwash to dislodge and discharge the debris. Only in the case of a severe clog would you have to spend 15 minutes to remove the control head, stir the beads through the generous 7” opening, reattach the control head, and backwash.

Q: Do you ever have to replace the bead media inside an Aquadyne system?

A: No, Under the normal use for which the Aquadyne system is intended, the beads will last a lifetime. They are made of a very strong and durable polyethylene material which will not break down. On occasion, you may notice that you loose a few beads through the sludge drain, but you would have to loose several pounds of beads before the systems performance even started to weaken. If for any reason you loose a significant amount of beads, they are quite cheap to replace.

Q: How much power does the system use?

A: None, the Aquadyne system is totally passive in its functions. The only power that you will use is the power that it takes to run your pump which you would have running regardless.

Q: We turn off our pump in the winter. Does this affect the Aquadyne system?

A: Yes and No. If you turn off your pump for the winter, you will need to winterize the filter and pump (if external). First you will give the filter a good backwashing. Then you will drain the filter body and control head by placing the control handle between any two functions and slightly opening the sludge drain in the bottom of the tank to allow the water to trickle out without loosing any bead media. The winterize cap that is located just above the sludge drain serves no purpose to the system as it is a product of the tanks original design. It can be removed, but is an ineffecient as the sludge drain is much lower in the tank and will allow more water to be drained for the purpose of winterizing. If you leave the water in the filter, the filter may freeze solid and burst the tank which is not covered by warranty.

Q: Will the beneficial bacteria die in our filter if we turn the system off?

A: Some of the bacteria will die off if the filter is left to sit without circulation, because there is no food in the form of waste or life giving oxygen coming through the filter to make them thrive. Also, if the beneficial bacteria do not get oxygenated, they produce carbonic acid which can cause a pH shift in an unstable enviromment, if drained, and allowed to sit all winter there will be enough of the bacteria systemic within the pond to reseed the filter quickly the following season. Always perform a backwash and rinse cycle after the filter has been sitting idle, even for a few days. This will clear any septic waste or carbonic acid, that has formed while the filter was off.

Q: If we medicate our pond, and use the RECIRCULATE mode to bypass the filter, will the medicine not kill the bacteria in the filter, once we return the filter to the regular filter position?

A: Most medications biodegrade or evaporate at different rates during and after treatments. Depending on the medication used, it is always advisable to make at least a 50% water change after a medical treatment. If it is not cost prohibitive, due to having to replace thousands of gallons of water, a 80% water change is ideal. A 50 to 80% water change will greatly reduce any hazardous effect that a medication might have on your filter, with few exceptions. Even if your filter is exposed to most

medications, it will only suffer a temporary slump for a couple of days. Beneficial bacteria reproduce by the billions per day, and it doesn't take long to re-establish a healthy colony.

Q: It seems that it would take quite a bit of water to backwash the filter.

A: I love this question! Not that I am going to tell you that it only takes a cup full. But rather to illustrate the all important water change that most people never provide for their fish. By appropriate measure, each different size of Aquadyne filter requires different amounts of water to perform a cleaning cycle. I am going to first say that each system requires less water to backwash than you should already be draining to give your fish a fresh drink. To put it simply, you should always change at least 10% of your pond water each week, filter or no filter. Fresh water is loaded with minerals and elements that are critical for your fishes physical health. By comparison, we too need the minerals and elements that are in water, so that our bodies can remain healthy and nourished. If you do not perform periodic water changes the fish will absorb all of the available minerals and there will be none left to continue supplementing their health. Remember how our bodies need calcium, iron, magnesium, zinc, etc. Fish are no different. Typically, you will only lose an inch or two of water from your during a backwash cycle. That will likely represent only a 5% water change, so it will not hurt to be a little generous and use a little extra water during a backwash, your fish will appreciate it.

Thank you for purchasing an Aquadyne Bead Filtration System. We have been told time after time by many of you that you have really done a lot of research in the marketplace to determine which manufacturers filter to purchase for your pond environment, and we are very pleased that you have chosen us to fulfil your needs. We are very respectful that you had the ultimate decision making ability to choose one of several filters available, and we will diligently stand behind you in support of your efforts to have a healthy, and as maintenance free pond environment as possible.

Sincerely,

Greg Crane

Appendix

Symptom: When running a blower on a B model filter, the blower blows air back through the pump and bubbles come out of the bottom drain or suction line in the pond.

Symptom: After a backwashing a B model filter, the water seems to slow down to a very small amount within hours.

Symptom: After a backwashing a B model filter, the water seems to slow down to a very small amount within one to two days.

Symptom: The water flow from the filter has slowly diminished over a long period of time and does not improve greatly even after a thorough backwash.

Symptom: There is a trickle of water coming out of the waste line when the filter control head is in the filter position.

Symptom: You have a new installation, the filter has been running for at least two weeks and the water quality has not visibly improved.

Symptom: You have an installation that has been running for several weeks, the filter has cycled and there is no ammonia or nitrites present, yet the water is green and will not clear up.