



MicroSeries

Installation Instructions & Owner's Manual

- Step-by-step installation instructions for MicroPond® Kits, MicroPondless™ Waterfall Kits, MicroSkim® and MicroFalls®
- Helpful Guide for Maintenance and Seasonal Care

MicroPond® Kit



MicroPondless™ Kit



Made in U.S.A. for / Fabriqué États-Unis pour
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MicroSeries

Installation & Maintenance Instructions

Congratulations on the purchase of the Aquascape's MicroSeries Pond Filtration system.

We've scaled down the professional version of these filters in order to meet the needs and desires of the do-it-yourself pond enthusiast. The MicroSeries pond filtration systems work in harmony with Mother Nature, and never against her.

This means that 'low-maintenance' will characterize your water gardening

experience because Mother Nature will be doing 98% of the maintenance work for you. If you have further questions, feel free to check out www.aquascapeinc.com.

This booklet contains the instructions for all MicroSeries units. The MicroPond® system is designed to have a waterfall and pond, while the

MicroPondless™ system is designed to have a waterfall disappearing into a bed of gravel, i.e. "Pondless". You'll find that many of the steps are the same for both styles of water gardens. Follow the step-by-step instructions in the order they are listed. Skipping steps or changing the order will create extra work in the long-run. We want to make this

experience as easy as possible, allowing you to concentrate on the creativity needed to design your waterfall. In other words ... stick to the plan and your water garden project will turn out to be a beautiful addition to your landscape!

PD

Applies to
MicroPond® Kit System



PL

Applies to
MicroPondless™ Kit System



CAUTION. Step varies between kits.
Applies to cases where steps vary between
MicroPond® and MicroPondless™ kits.

PD/PL

Applies to both MicroPond®
and MicroPondless™ kits.

Locate & Mark Out Your Basin Area



- We suggest that you use a plain, old garden hose to define the shape of your new water feature. The hose is flexible, and can be pushed and pulled in various shapes. Step back, evaluate and modify your design until you have something that you really like.
- The MicroPond® Kit is available in three sizes (4'x6', 6'x8', and 8'x11') and the MicroPondless™ Kit is available in one size (4'x6'). Double check to make sure the length and width of your layout does not exceed the amount of liner required for the pond.
- Be sure to locate your new water garden close to a patio, deck, porch, or other hardscape, so you can sit and relax close to your pond. Also, keep in mind viewpoints of the water garden and waterfalls from inside. Try to make it visible from the kitchen, family room, or bedroom for year-round enjoyment.
- Once you have the water garden shaped and defined with your hose, take a can of brightly colored, highly visible spray paint and outline the shape (around the hose) on the grass. (See fig. 1)



Fig. 1 Use a highly visible spray paint and outline the shape on the grass.

Place MicroSeries filters into position

- Since the MicroFalls® filter is typically the main waterfalls, it should be positioned so it's facing the main viewing areas.
- Make sure it is placed close to the edge of the MicroPond®/MicroPondless™ basin so you can use the pond liner to connect up to the MicroFalls® filter — unless you're adding a stream. Adding a stream will require the MicroFalls® to be set further away from the MicroPond®/MicroPondless™ basin and will require an extra section of stream liner. Your local Aquascape supplier can help you determine the additional products required to build longer streams and waterfalls.

MicroPond® Only: In order to maximize circulation, the MicroFalls® and MicroSkim® are ideally placed on opposite ends of the pond, directly across from each other. (See fig. 2)

Lay Plumbing

- To eliminate the need for trenching, lay the Kink-Free pipe in a place around the perimeter of the MicroPond® or MicroPondless™ basin. This should be completed before you begin your excavation so the soil you remove from the pond can cover the Kink-Free pipe, disguising it from sight. (See figs. 2 & 3)

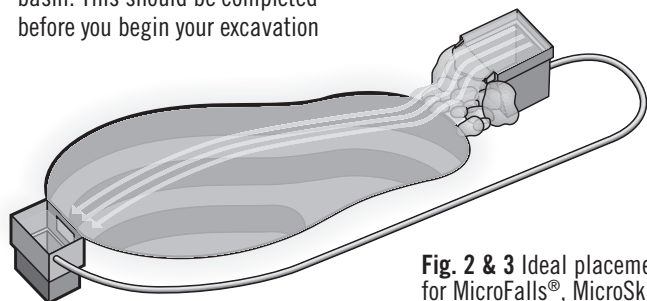


Fig. 2 & 3 Ideal placement for MicroFalls®, MicroSkim® and plumbing.



Hook up and level the MicroFalls®

- The first step is to install the bulkhead fitting in the hole provided in the back of the MicroFalls®. The rubber washer should be located on the inside of the MicroFalls®. Tighten the nut on the outside until the rubber washer begins to bulge. This should only be approximately one turn past hand-tight. Be careful not to over tighten the nut, which could possibly crack the bulkhead. Please note that the bulkhead fitting is reverse threaded. So, in other words, turn the nut counterclockwise to tighten! (See figs. 4 & 5)
- Now install the barb fitting included with your kit into the bulkhead fitting. A PVC slip fitting has also been included in case you are using flexible PVC pipe. Use some of the silicone sealant to coat the threads of the fitting, in order to help provide a watertight seal.
- Now it's time to position the MicroFalls® in the desired location.
- The MicroFalls® should be set at or slightly below the grade of the yard. Simply remove a section of sod or a few inches of soil in order to create a firm foundation for the MicroFalls® to sit. Design tip - Keep the waterfall to the scale of the yard! The goal should be to create the perception that Mother Nature herself has constructed the waterfall. Avoid creating a "volcanic look" by trying to raise the MicroFalls® in a flat backyard.
- Be sure to compact the area beneath the MicroFalls® box using a hand tamper or some other heavy flat object that can be pounded onto the soil. This will help prevent any future settling.
- Use a 2' bubble level in order to make sure your MicroFalls® is properly set into position. Your MicroFalls® should be level from side-to-side and tilt forward 1/4 of a bubble on a 2' level. This will make sure the water comes over the front of the MicroFalls® and covers the entire spillway. (See fig. 6)
- The filter is now ready for the kink-free pipe and hose clamp to be slipped onto the pipe fitting.

The connection is designed to be tight and it may take some force to get the pipe on the barb fitting. Twisting the pipe clockwise may help "thread" the pipe onto the fitting. Have someone hold the MicroFalls® in place in order to prevent it from shifting out of level. Once installed, the hose clamp can be tightened to secure the pipe on the fitting. (See figs. 5 & 7)

- Double check to make sure the MicroFalls® is still level after installing the plumbing.



Fig. 4 Attach bulkhead fitting.



Fig. 6 Level the MicroFalls® side to side as well as front to back.

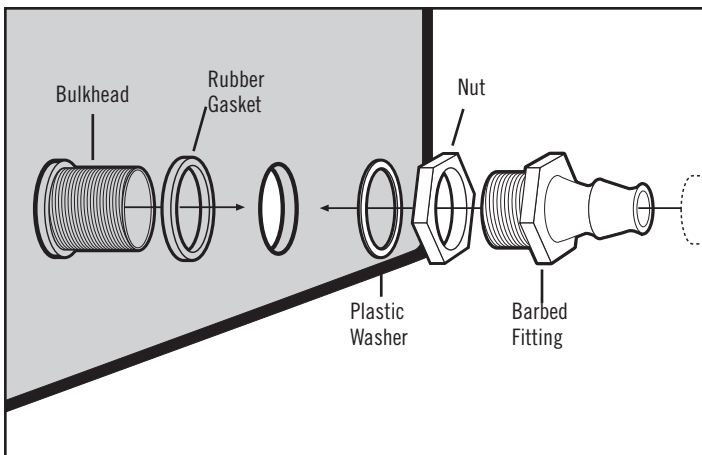


Fig. 5 Bulkhead Assembly.



Fig. 7 Finished Bulkhead Assembly.

PL ! STEP 5

Excavate your MicroPondless™ Basin

The shape and depth

- Digging is very labor-intensive, so pace yourself and get some friends and family to help you.
- We suggest excavating the basin no more than 24" deep. This depth provides the proper water volume in the basin to operate the waterfalls. (See figs. 8 and 9)

- All of the soil removed from the excavation can be spread and compacted around the MicroFalls®, creating a berm. The filter should be completely surrounded by soil by the end of the project. (See fig. 10)

Leveling the edges

- One of the most important parts of the excavation is getting the perimeter of the basin level. An excellent tool for this is a 2x4 set across the basin. Set a 4-foot bubble level on the 2x4 to make sure the perimeter of the basin is level. We recommend using a

transit or sight level on larger projects. Check your progress several times while digging.

- Re-check all your measurements, including length and width of basin, plant shelf depth, and overall basin depth.

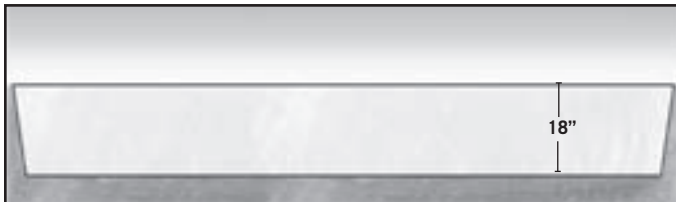


Fig. 8 First, dig entire basin to 18" depth.

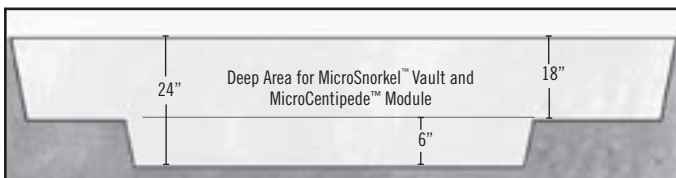


Fig. 9 Excavate the deep area of the basin.



Fig. 10 Soil backfilled around the MicroFalls® helps hide the filter and creates a planting berm.

PD ! STEP 5

Excavate your MicroPond® Basin

The shape and depth

- Digging is very labor intensive, so pace yourself and get some friends and family to help you.
- We suggest excavating the pond no more than 18-24" deep. This depth provides the proper water

levels required for aquatic plants and is deep enough to keep fish alive during winter. See the maintenance section for more information on caring for fish.

- The excavation should be dug with a series of shelves. The shelves will add stability to the walls of

the pond and will also create planting beds for different types of aquatic plants.

- The first shelf should be about 8-10" down (See fig. 11), or the height of a standard shovel.

- The second is typically down another 8-10". (See fig. 12)
- The third shelf (if desired) will be excavated down another 6" (See fig. 13), reaching a final excavation of 24".

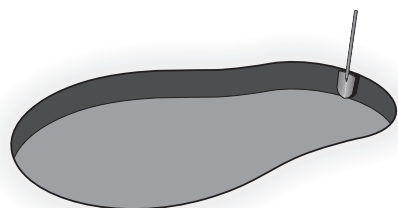


Fig. 11 First, dig entire pond one shovel depth.

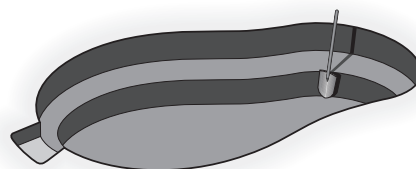


Fig. 12 Dig second shelf one shovel depth and start excavation of skimmer hole.

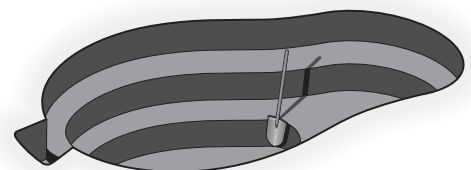


Fig. 13 Dig the pond to its max depth and finish excavation of the skimmer hole.

Excavate your MicroPond® cont...

- All of the soil removed from the excavation can be spread and compacted around the MicroFalls®, creating a berm. The filter should be completely surrounded by soil by the end of the project. (See fig. 10 on previous page)

Design spaces for plants

- Design your shelves wider in areas where you wish to place aquatic plants. (See fig. 14)
- Marginal and bog plants require a water depth up to about 10", so the top shelf is a perfect location for these plants. (See fig. 14)
- Water lilies will vary according to species, but a depth of 12-24" at the crown works best, so the second shelf or bottom of the pond will work great for the lilies. (See fig. 14)
- To make planting lilies easier, add a few 'lily pockets'. These pockets are simply depressions or bowls cut into the soil 6-8" deep and 10-16" in diameter. The goal is to create a natural looking pond, and this is possible only if plant pots are eliminated or completely hidden. (See fig. 14)

Leveling the edges

- One of the most important parts of the excavation is getting the perimeter of the pond level and setting the level of the water. An excellent tool for this is a 2x4 set across the pond. Set a 4-foot bubble level on the 2x4 to make sure the perimeter of the pond is level. We recommend using a transit or sight level on larger projects. Check your progress several times while digging.
- It is typical to set the water level 2- 3" below the main viewing area (patio, deck, etc.). This will bring the water level of the pond up close to the edge of the pond without going over the sides. (See fig. 15)
- Rough out an excavated area for the MicroSkim®. Simply dig a hole 18" wide by 21" long (the outline of the skimmer) and 18" below the desired water level. (See fig. 13)
- The skimmer should be excavated down to a depth so that the proposed water level in the pond is approximately 3/4" below the top of the opening of the skimmer.
- Re-check all your measurements, including length and width of pond, plant shelf depth, and overall pond depth.

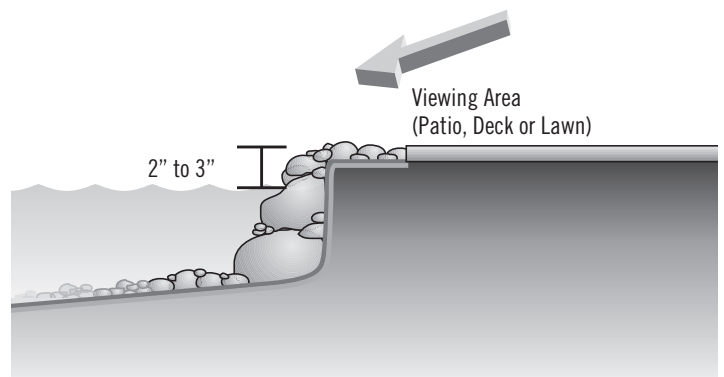


Fig. 15 Set water level 2" - 3" below viewing area.

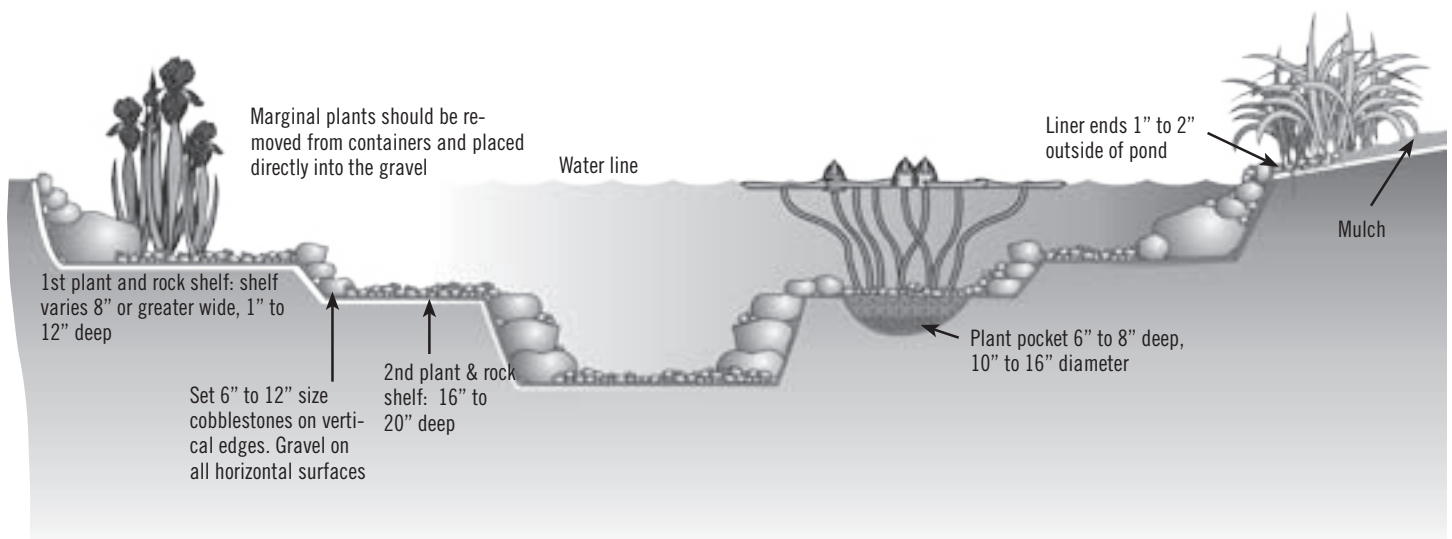


Fig. 14 Pond excavation - side view of plant pockets.

PD/PL STEP 6

Install Underlayment and Liner

- Remove any sharp objects from the excavated hole that may damage the liner.
- Unfold the underlayment fabric and place it into your excavated MicroPondless™/MicroPond® basin. Starting from the bottom, remove the slack from the underlayment, making sure it conforms into all of the elevations.
- Now place the EPDM Fish-Safe liner on top of the underlayment.
- The installation process is the same as the underlayment, starting at the bottom and contouring the liner up and out of the MicroPondless™/MicroPond® basin. (See fig. 16)
- Try to get the large folds out, but the main goal is to make sure that it's lying flat and going into all corners. Don't try to get it perfect—you will hide the liner with rocks and gravel later.
- Make sure the liner is high enough around the edges of the MicroPondless™/MicroPond® basin. This should not be a problem if you measured out the pond and excavated it correctly. Problems can be fixed by readjusting the liner into the excavation, backfilling (making the MicroPondless™/MicroPond® basin smaller) in areas where there is not enough liner, or simply buying a larger liner.



Fig. 16 Place the liner on top of the underlayment, following the same installation procedures. Make sure liner is positioned in such a way that allows it to extend and completely cover the opening on the MicroFalls®.

PL ! STEP 7

Installing the MicroSnorkel™ and MicroCentipede™

You're getting off easy on this step if you are installing the MicroPondless™ system. Simply place the MicroSnorkel™ and MicroCentipede™

back into their proper positions on top of the liner. (See fig. 17)



Fig. 17 Place The MicroSnorkel™ Vault and MicroCentipede™ Module on top of the liner.

PD ! STEP 7

Installing the MicroSkim®

Set up and level the MicroSkim®

- You've already roughed out a hole approximately 21" (l) x 18" (w) x 18" (h) deep during the excavation phase. Use a 2' bubble level in order to make sure your MicroSkim® is properly set into position. Your MicroSkim® should be level from side-to-side and front to back.
- Install the bulkhead fitting into the overflow hole. Refer if needed back to the steps under the "Hookup and Level MicroFalls®" section for details on installing the bulkhead fitting.

(See fig. 4 & 5) **THIS NEEDS TO BE DONE BEFORE THE SKIMMER IS SET INTO PLACE, OTHERWISE YOU CANNOT TIGHTEN THE BULKHEAD FITTING.**

- Make sure skimmer is set so the desired water level in the pond is approximately 3/4" below the top of skimmer opening. (See fig. 18)

Attaching the MicroSkim® Faceplate

- Position the liner against the MicroSkim® opening, making sure there is slack below the opening. This will help reduce tension on the

faceplate when placing boulders in front of the unit.

- Mark the outer perimeter of the MicroSkim® opening on the liner, then mark a second box 1.5" inside of it. This insures that you don't cut too much of the liner, which would result in a possible leak. (See fig. 19)
- The hole located in the back of the MicroSkim® is for the overflow. The overflow will help maintain the maximum water level in the pond after rainfall, ensuring that your skimmer works properly and water

does not travel over the edges of the liner and cause problems with hydrostatic pressure.

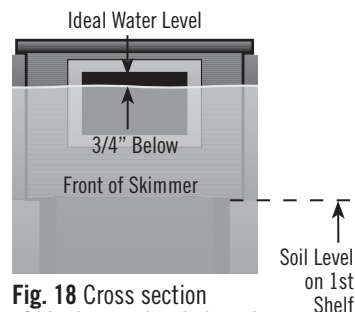


Fig. 18 Cross section of ideal water level viewed from front of skimmer.

Installing the MicroSkim® cont...

- Cut the inner box using a pair of scissors, and insert the skimmer faceplate into the hole. (See fig. 20)
- Make sure MicroSkim® faceplate is in the upright position. (See fig. 21)
- Temporarily install the faceplate and liner to the skimmer using two screws in the upper corners. Using an awl or nail poke the first hole in the liner all the way through to the inside of the filter box. **Be careful not to damage the threads on the nut inserts when punching the holes with the awl!** Remove the awl or nail while holding the faceplate and liner in place and begin threading one of the screws into filter. Repeat this process for the other screw. (See fig. 22)
- Now remove the faceplate from the skimmer, keeping the screws installed through the faceplate and liner.
- Apply a bead of fish safe silicone sealant around the skimmer opening, over the nut inserts. Pre-installing the two screws in the earlier steps will make it easy to line up the skimmer faceplate after the silicone is applied and will keep the silicone in as thick of a bead as possible. (See fig. 23)
- Replace the skimmer faceplate and the two corner screws, and then proceed with the bottom two corners (See fig. 24). Make sure the holes in the faceplate that the weir flap clicks into are on the bottom.
- With the 4 corners secured, you may now punch the remaining holes with your awl and thread in all the screws. Again, be careful not to damage the threads on the nut inserts.
- Let dry for at least one hour before introducing water!

Note: Power tools are not recommended for installing the screws and may strip the nut inserts.



Fig. 19 Mark the skimmer opening on liner and cut an area 1.5" inside that mark.



Fig. 20 Place skimmer faceplate through liner and place into skimmer for alignment.



Fig. 21 Skimmer faceplate is properly placed when hinge is on the bottom.



Fig. 22 Using an awl, poke holes through the liner at screw holes; temporarily screw top corners into place.



Fig. 23 After alignment remove faceplate and apply silicone sealant.



Fig. 24 Carefully replace the skimmer faceplate into the silicone lined opening.

PL ! STEP 8

Add Rock and Gravel

Rocking in the Pondless

- Add 1 1/2" to 2" size gravel into the basin up to the side of the MicroPondless™ Vault. (See fig. 25)
- A finishing layer of decorative gravel can be added to the top if desired.
- Set larger boulders (6" – 18") around the perimeter to support the edges of the basin. The plumbing from the MicroFalls® filter should be brought over a slightly lowered edge of the liner and to the location of the MicroPondless™ Vault. Boulders and gravel can be used to hide the plumbing. (See fig. 26)



Fig. 25 Add gravel into the basin.



Fig. 26 Placement of MicroSnorkel™ Vault and MicroCentipede™ within basin.

PD STEP 8

- You can expect to use several tons of stone and gravel for your water feature. Talk to your Aquascape dealer for help choosing the quantity and sizes of stone and gravel.

Rocking in the Pond

- Start from the bottom and set the largest character boulders first against the vertical walls, then stack the smaller boulders on top. (See fig. 27)
- Be careful when placing any large boulders so you don't damage the liner.
- The opening on the front of the MicroSkim® can be hidden by placing boulders on either side and bridging a stone across, creating a cave effect.

Note: Make sure the boulders do not block the waterflow into the skimmer.

- Cover all remaining flat surfaces with a couple inches of decorative gravel. This will help lock the

boulders in place, as well as cover the remaining liner, protecting it from ultraviolet rays, and giving bacteria a place to colonize, not to mention it just looks better.

- This is also a good time to add lilies to the plant pockets. Remove the lily from the pot and place it into the lily pocket. Top-dress the lily with a layer of gravel to hold the soil into place. Lilies, if not on hand at this time, can be added after the pond is filled. (See fig. 28)



Fig. 28 Loose gravel should be placed in around the lily to keep the soil from being stirred up in the pond after the water is added.



Fig. 27 Starting at the bottom set the largest character boulders first then fill in with the smaller ones.

PD/PL STEP 9

Wash Rocks and Gravel

Wash the rock and gravel down in order to remove the dust and dirt. Use the pump provided with the kit attached to a scrap section of Kink Free pipe. The pump can be

temporarily set in the MicroSkim® or MicroPondless™ Vault, and the water discharged to a drainage area in the yard.



Hooking up the Pump and Plumbing

The MicroPondless™ and MicroPond® utilize the same style pump and plumbing fittings. Connect the pump plumbing kit to the pump and tighten all clamps before lowering into the MicroSkim® or MicroPondless™ Vault. The plumbing assembly includes a threaded union disconnect that will allow you to remove the pump when needed.

MicroPond® - The following steps are specific to the MicroSkim®. Skip down

if you are hooking up the pump in a MicroPondless™ vault.

- The MicroSkim® has two holes on either side of the unit for the plumbing to travel to the MicroFalls®. Choose the plumbing hole that is most convenient. The pipe simply passes through the opening on either side of the MicroSkim®. (See fig. 29)
- The pump's electrical cord can be set in the slot located in the back, top edge of the skimmer.

Overflow Installation

- Now install the barb fitting and clamp included with your kit into the bulkhead fitting. Use some of the silicone sealant to coat the threads of the fitting, in order to help provide a water-tight seal. A PVC slip fitting has also been included in case you are using flexible PVC pipe.
- Attach and trench a section of Kink Free pipe into place (3' minimum).

Create a drainage area at the end of the pipe by excavating a small pit, roughly 16" in diameter and at least 12" deep. Fill the pit with excess gravel. This will allow water in an overflow situation to flow through the pipe and drain away from the pond. (See fig. 30)

- A layer of scrap underlayment fabric, soil or sod can be added to cover the drainage area.

MicroPondless™ - The Kink Free pipe from the MicroFalls® can be trimmed to proper length and inserted through the slot on the side of the MicroPondless™ Vault. Insert the barbed fitting on the

end of the plumbing assembly into the Kink Free pipe and tighten the clamp. The cord from the pump can be buried just beneath the stone and gravel and run over to the electrical supply.

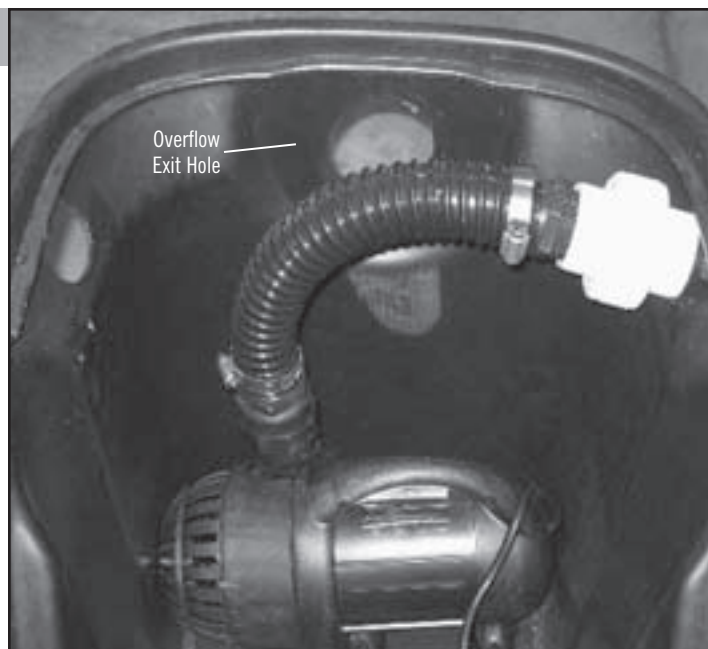


Fig. 29 Plumbing Exit Holes

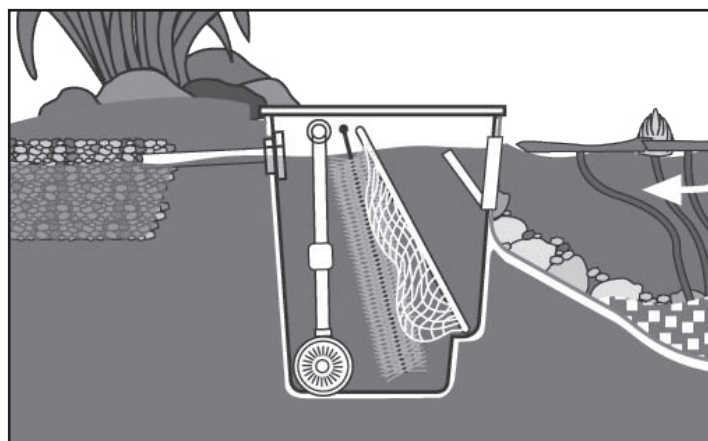


Fig. 30 Overflow Detail

Add Water

Fill up the MicroPondless™ or MicroPond® basin with water. The MicroPond® should be filled just below the level of the overflow in the MicroSkim®. The MicroPondless™ is typically filled to a point just below the gravel.

Note: We recommend adding EcoSystems® EcoStarter™ to dechlorinate and properly condition city water prior to introducing fish to your MicroPond®. See owner's manual section for tips on adding fish to the pond.



Build the waterfall

Note: Filter mats and media nets are not needed if installing a MicroPondless™ system.

Hook Up The MicroFalls®

- Prior to installing the waterfall lip, make sure the face of the filter and liner is clean and free of dust and debris.
- Have someone hold the liner against the MicroFalls® while you line up the waterfall snout over the liner. Make sure there are no wrinkles and the liner comes up above the sides of the MicroFalls®. Be sure that you have a few inches of slack liner along the front base of your MicroFalls®. This will help reduce tension on the waterfall lip

when placing boulders in front of the unit. (See fig. 32)

- Temporarily install the waterfall lip and liner to the MicroFalls® using the two outermost screws. Using an awl or nail, poke the first hole in the liner all the way through to the inside of the MicroFalls®. (See fig. 33 & 34) **Be careful not to damage the threads on the nut inserts when punching the holes with the awl!** Remove the awl or nail while holding waterfall snout and liner in place and begin threading one of the screws into the filter. Repeat this process for the other screw. **Note:** Power tools are not recommended for installing the screws and may strip the nut inserts.

- Now remove the waterfall lip from the MicroFalls®, keeping the screws installed through the waterfall lip and liner.
- Place a thick bead of silicone across the insert nuts on the front of the MicroFalls® (See fig. 35 & 36). Pre-installing the two screws in the earlier steps will make it easy to line up the waterfall snout after the silicone is applied and will keep the silicone in as thick of a bead as possible.
- Reattach the waterfall lip and liner using the two pre-installed screws. (See fig. 37)
- Using an awl or nail, poke the remaining holes in the waterfall lip

- and install the rest of the screws. (See fig. 38)
- Let dry for at least one hour before introducing water!
- Install the two filter pads into the MicroFalls®.
- Add approximately 10 lbs of lava stone or Aquascape BioBalls™ (not included) into the media net. Set the media bag on top of the filter mats (see picture on page 16 for an example).

***Please Note:** Filter media is not included with the MicroPondless™ Waterfall unit. The aggregate in the basin provides a much larger surface area for bacteria to grow than the filter media do.



Fig. 32 Make sure you have a few inches of slack liner along the front base of your biofilter box



Fig. 33 Poke holes in the liner all the way through to the inside of the filter box.



Fig. 34 Thread screws into the filter.



Fig. 35 Place a thick bead of silicone across the insert nuts.



Fig. 36 Line up the waterfall lip.



Fig. 37 Reattach the waterfall lip and liner.



Fig. 38 Install the rest of the screws and remove extra liner, using the waterfall lip as a guide.

Creating the Waterfall

- Place two larger boulders on either side of the waterfalls you are creating in order to “frame” the waterfalls. The water will be running between the two larger boulders you’ve set in place. (See fig. 39)
- You can now begin to stack the rocks between the two larger

boulders. These are the rocks that the water will be running over, so take your time and be creative. Start with the larger rocks on the bottom and work your way up to the smaller ones on top.

- Small stones and gravel can be used to fill in the gaps between the larger waterfalls stones.

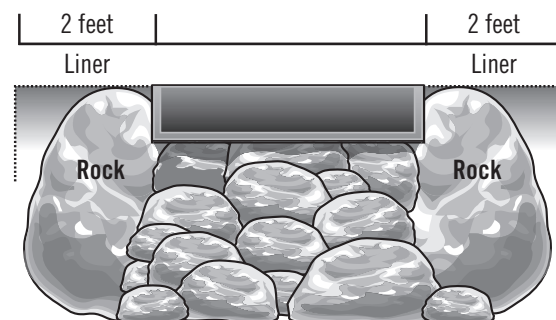


Fig. 39 The water will be running between the two larger boulders.

Build the waterfall cont...

- The MicroFalls® is designed with a plastic lip for the water to cascade off. You can use the plastic lip or hide the lip using the MicroFalls® plastic waterfall stone (sold separately) or even piece(s) of thin (no more than 3/4" thick) natural slate. (See figs. 40 & 41) This stone can be attached to the MicroFalls® using Aquascape black waterfall foam (sold separately). The black waterfall foam can be purchased from your local Aquascape supplier and will come

in handy when filling other gaps between the stones that water is flowing over. The foam keeps the water flowing over the top of the waterfall stones. Without the black waterfall foam, you may lose some of the impact of your waterfall as water travels beneath the rocks.

- Place smaller rocks on the rock ledge inside the MicroFalls® to help hide it in the landscape. (See fig. 42)

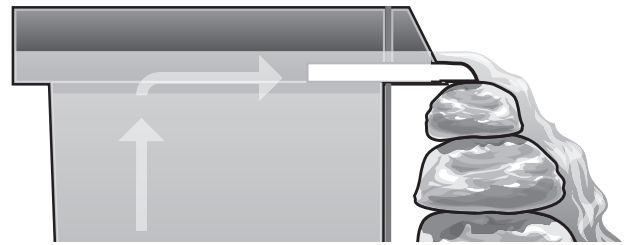


Fig. 40 If using a natural rock for your waterfall weir, make sure that it is fairly thin. (no more than 3/4")



Fig. 41 If a thick rock along with a larger flow pump is used, the water flow may be so great that it will flow over the sides of the MicroFalls®.

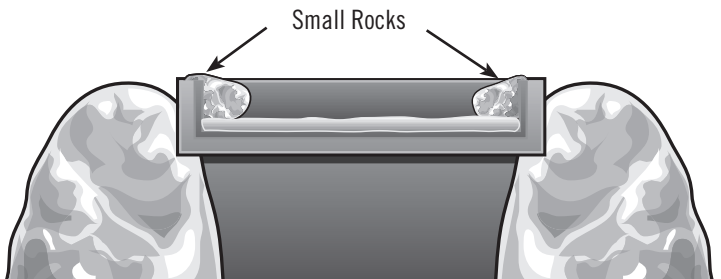


Fig. 42 Place smaller rocks on rock ledge in the MicroFalls®.



PD/PL STEP 13

Bring in the topsoil

- Add topsoil to the berm and surrounding area in order to provide a good substrate for future landscape plantings.



PD/PL STEP 14

Build the retaining wall

- Finish off the berm where the MicroFalls® is buried by building a small retaining wall out of boulders. This step may or may not be needed, depending on the size of the berm and the transition into the existing landscape.



PD/PL STEP 15

Plug in and Tweak the Waterfalls

- As soon as the MicroPondless™ or MicroPond® is filled and all of the black waterfall foam is dry (if used on project), you may plug the pump in and test the waterfall.
- You can “tweak” the waterfall by placing smaller stones and gravel on the waterfall cascades. This will change the appearance and sound of the water. Have fun playing with the water coming over the falls until you achieve the desired effect.

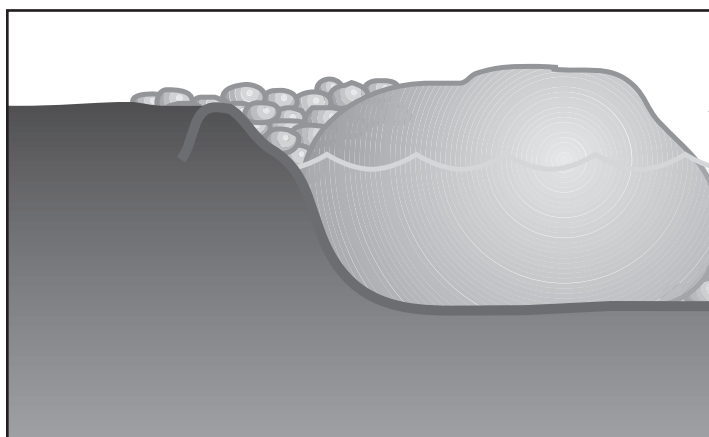
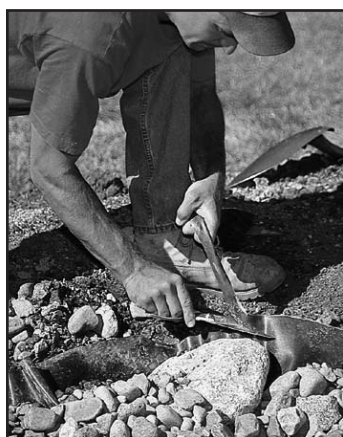


PD/PL STEP 16

Trim the liner

- With everything running, go around the perimeter of the pond with a pair of scissors and trim off any excess liner, always leaving several inches above the water level as a precaution. The remaining liner edges can be covered with gravel.

Note: Do not trim the liner until the waterfall is running and the pond is filled to the desired level. Prematurely trimming the liner may cause leaks!



PD/PL STEP 17

Mulch the berm

- The entire area surrounding the basin can now be mulched and any surrounding plants added.



PD/PL STEP 18

Clean up

- You're at the final stages of the project! All that is needed now is to clean up the mess you've made around the yard.

Owner's Manual and Bacteria

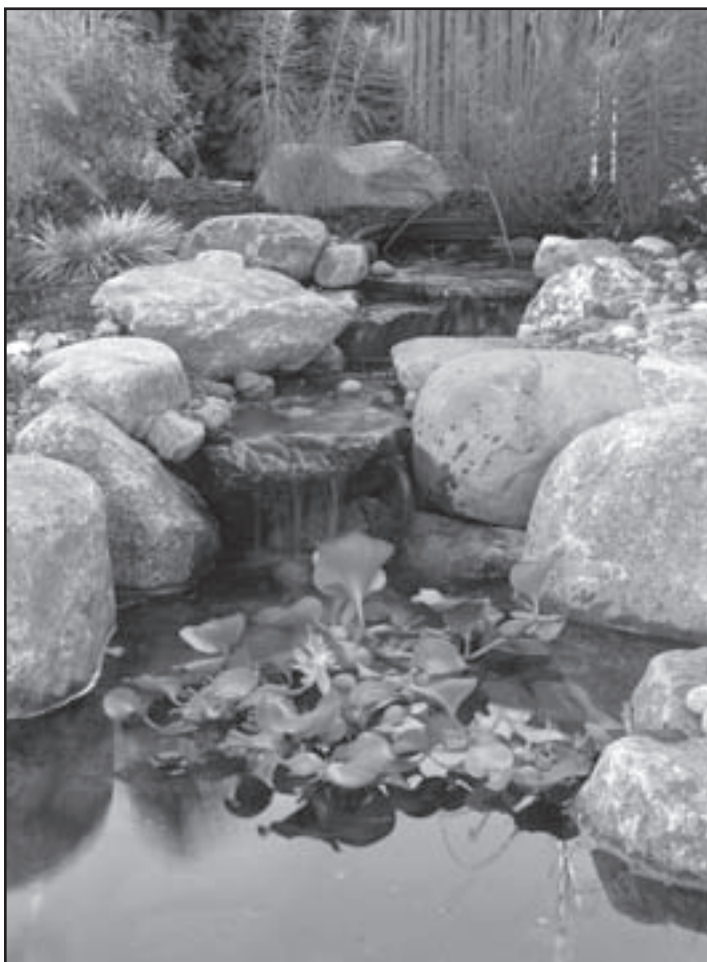
- Refer to the following pages in this instruction booklet for care and maintenance of your new water feature.
- We have supplied you with several packets of EcoSystems® EcoStart-er™ beneficial bacteria and dechlorinator (not included with the MicroPondless™ Kit). Simply add one of the packets into the pond. The packet will dissolve and

the bacteria will be dispersed into the pond. This should be repeated in several days. Contact your local Aquascape supplier for more information on routine maintenance using EcoSystems®, as well as other water treatment products designed to help balance the ecosystem of the pond.



ENJOY!

No further explanation needed for this step!



General Maintenance & Seasonal Care

PD/PL



The Ecosystem

Fine wines get better with age ... the same can be said about your new water feature! Be patient with the new addition to your landscape - it's going to look better and be easier to maintain with every season. The filter system on the MicroPond® and MicroPondless™ Kits is designed around the foundation of a balanced ecosystem. The ultimate goal is to have nature do the work ... not you! It won't happen overnight, but it will happen. Don't be surprised if your new water garden begins to grow algae. In general, it can take anywhere from 2-6 weeks for

the ecosystem to begin to develop. Aquascape produces a complete line of water treatment products specifically designed to help you maintain the water quality in your water garden and help reduce maintenance. See your Aquascape supplier for information on the complete line of Aquascape water treatment products.



PD



The MicroSkim®

Debris Net

The MicroSkim® filter is designed to sweep the surface of the water so that it is free from debris. The net inside the skimmer is the first filter stage of the MicroSkim® (See fig. 43). The net will collect leaves, twigs, seeds, and other pond debris. It takes approximately two to three minutes every other week during the summer to empty the debris

net. More frequent changes will be required during the fall and spring because of the quantity of leaves falling off the surrounding trees. It is a good habit during your first season with the pond to periodically lift the MicroSkim® cover and check the quantity of debris in the net. This is especially true in the fall. Keep a mental note as to how often your net has to be emptied.

It's important that the debris net is not allowed to become too full - too much debris can reduce the water flow to the pump, and may eventually damage it.

Filter Brush Cartridge

The brushes are the second stage of the MicroSkim® filter (See fig. 44). The brushes are designed to handle any debris that finds its way

past the debris net. The filter brush cartridge will not need maintenance as frequently, since the net will remove the majority of the debris in the water. Remove and rinse the brushes when you notice the flow being restricted to the pump or an excessive build-up of debris on the brushes.



Fig. 43 The net inside the skimmer.



Fig. 44 Filter brush cartridge inside the skimmer

PL ! The MicroPondless™ Vault

One of the greatest features of the MicroPondless™ filter is that there is very little maintenance. The system can be run 24 hours a day or can be turned off and on when desired. Don't forget to periodically check that there is enough water in the MicroPondless™ basin to properly operate the waterfalls. When you hear the pump "gurgling" or sucking air you know it is time to add water.

The Pump

The water reaching the pump should be relatively free of any large debris, thanks to the fact that the water has to pass through layers of gravel in the MicroPondless™ basin. Occasionally, you may notice a reduction in the amount of water coming over your waterfall – this signals that it may be time to clean the filter

screen on the bottom of the pump. This process should take no longer than five minutes. Simply unplug and remove the pump from the Signature Series™ MicroSkim® or MicroPondless™ Vault and physically remove any debris found on the bottom of the pump. You may also want to physically remove any debris with your hands that may have found its way to the bottom of the MicroPondless™ Vault, where the pump sits (See fig. 45).

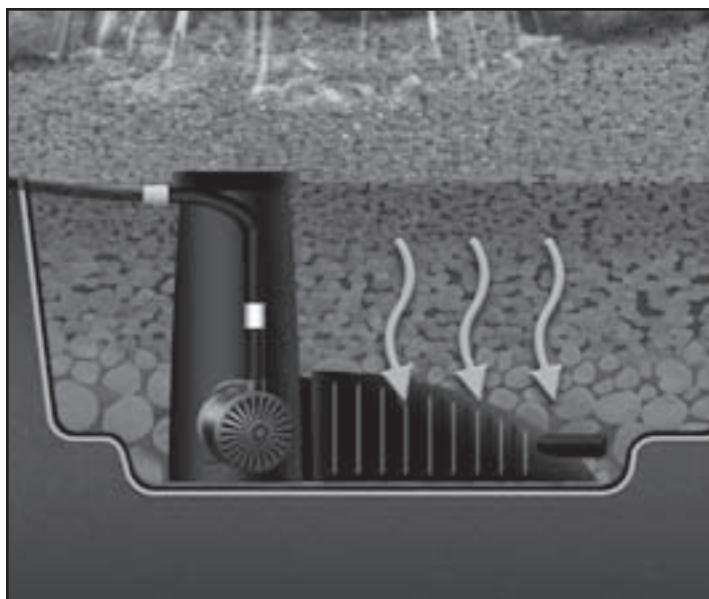


Fig. 45 The MicroPondless™ Vault.

PD/PL The MicroFalls®

The MicroFalls® is the starting point of your waterfall. The filter mats and filter media provide a "home" for the beneficial bacteria to live that help clean the pond and provide crystal clear water. The MicroFalls® is designed to require once a year cleaning when used in combination of a MicroSkim® or MicroPondless™ Vault prefilter. These filters ensure that large debris is filtered from the water before it reaches the MicroFalls®. DO NOT clean the filter mats or filter media bag in the MicroFalls® more than once a year. Cleaning them, especially with chlorinated tap water, more than once a year will

reduce or kill the beneficial bacteria growing on these filters. Replace old filter mats after several years, when they begin to tear or fall apart.

Note: the MicroFalls® filter that comes with the MicroPondless™ system does not include filter mats or media bags. There is no need for these items since there is no pond.



PD/PL Water Treatments

The EcoSystems® line of water treatment products will help you maintain healthy, crystal clear water in your water feature. See your Aquascape supplier for more infor-

mation on the EcoSystems® product line, as well as other products and accessories from Aquascape that are designed for your water feature.



PD/PL Leaks

If you notice you have to add water on a daily basis, you may have a leak. We have found that 99% of leaks occur along the perimeter of the waterfalls and pond edges. Small leaks are generally due to the ground settling; this causes the water to trickle over the edge of the liner in the stream or water-

fall. Leaks such as these can be easily fixed.

Steps in finding a leak:

- Check the perimeter of the pond for any areas that are wet. Damp or saturated soil is usually a good indicator that water is leaking over the liner. (See fig. 45)
- Check to make sure any slow moving sections of the stream/waterfalls have not become obstructed by leaves, plants or other debris, causing the water to back up over the edges of the liner.
- Investigate the outside perimeter of the waterfall and stream. Look for any water that is noticeably

being diverted over the side of the liner.

- Once you have found the leak, simply pack soil beneath the liner in order to raise the edge above the water level. Hide the exposed liner by replacing the gravel and add mulch. (See figs. 46 & 47)



Fig. 45 Check the perimeter of the basin for any areas that are wet.



Fig. 46 If you find the leak, pack soil beneath the liner to raise the edge.



Fig. 47 Hide the exposed liner with gravel and mulch.

PD/PL Fall & Winter Maintenance

Water clarity is usually at its best in the fall because of fewer battles with algae. It truly is an enjoyable time of year. Here are some things that you can do to keep your water garden looking good.

- There may be increasing numbers of yellow leaves this time of year, so prune them off all of your plants. Your lilies—tropical and hardy—should still be going strong, at least until the first heavy frost.
- Stop fertilizing your aquatic plants when the weather starts getting cooler. This lets them know the season is coming to an end.
- When your water temperature gets down around 50 F° (10° C) or so, stop feeding your fish. If you continue feeding them, you could cause major health problems for your little aquatic friends.
- Enjoy the good water quality! In the fall, water is almost always very clear because of the cooler temperatures and the full, lush plants.
- About this time, the foliage starts falling off the trees, and the pond

fills up with wet soggy leaves. This is one time of year when your pond may require daily maintenance. (See fig. 48) If you have a skimmer, you'll probably have to empty the debris net every day to keep up with the influx of leaves. Some of the leaves will undoubtedly sink to the bottom, although you can net these pretty easily before they start to break down. Don't knock yourself out snagging every single leaf. Some left in little areas here and there will give insects and frogs a place to overwinter.

- If you've left a little too much organic matter, it may start looking like a tall glass of sweet-tea from the south.

But don't fear. Removing excess debris, and adding activated carbon should clear it right up.

- As it gets cold, the lilies and marginals will have all but died for the season, and the trees are just about bare. The fish are spending more time on the bottom and are slowing down. Now you can cut

Note: Several of the steps do not apply to MicroPondless™ systems.



Fig. 48 Remove excess debris from your pond.

Fall & Winter Maintenance cont...

back most of the dead plant material and remove the tropicals. Cut back your cattails above the water level, or better yet, leave them up to see how magnificent they look in the winter. (See fig. 49)

- If you're fortunate enough to be where it stays warm all year round, you're set for the winter.
- If you live up north, you'll begin to see ice forming. Some areas may still have plants growing, and frisky fish, but the majority



Fig. 49 Cut back dead plant material.



Now your basin is ready for winter!

of us look at our ponds from the inside for the rest of the year. If that sounds familiar, you have a choice. You can either keep your pond running, or shut it down.

- To shut your pond down, first unplug your pump and pull it out of the water. Store the pump in a frost-free location, ideally submerged in a bucket of water. (See fig. 50) If you have a MicroPond® and have fish, an AquaForce™ pump bubbling the water surface will oxygenate the water. (See fig. 51) In all but extremely low temperatures, the bubbling of the pump will also keep a hole open in the ice to allow for a gas exchange, keeping your fish alive. it is not necessary to keep a hole open in the ice if you don't have fish.
- If your area experiences long periods of sub-zero weather, you may consider adding a floating de-icer. Controlled by a thermostat, the unit only runs when the water temperature is at or below freezing, heats the water to just above that, and then shuts off again. See your Aquascape supplier for products to help your pond during the winter.
- If you use a floating de-icer, place it away from the bubbling water, as the water movement can cause the heated water to move away from the de-icer, making it run more than necessary.
- The other option is to keep your stream and waterfall running.



Fig. 50 An AquaForce™ pump will oxygenate the water in your pond.

This will require some baby-sitting to make sure an ice dam does not form, causing water to run out of the MicroPondless™ / MicroPond® basin. Also, be sure to keep your water feature topped off so your pump continues to function properly. You may have to bring buckets of water from your house, or run a hose into the pond about once a week to keep everything running smoothly. If you make the extra effort to keep your falls running throughout the winter, you'll see beautiful ice formations and patterns around the falls and streambeds.

The most important thing is to have fun with your water feature all year long. Keep some of these key maintenance issues in mind, and it will be smooth sailing. In the meantime, stay warm!



Fig. 51 The water in the bucket will prevent the pump seals from drying and cracking.



Spring is simply the most exciting time of year. In all climates, there's fresh new growth all over the landscape, and everything is just bursting into life. Your water feature is no different. As things slowly awaken from their winter hibernation, there are some things that you can do to make sure your water feature gets off to a good start this spring.

Clean Up Your Act!

Excess organic matter in the water feature can lead to some real algae problems later in the season. During the winter, your water feature has been a debris magnet, collecting every dropped leaf, branch, seedpod, nut, or piece of garbage that blows in its direction.

This is where a good spring cleaning comes in. You'll need to clean up all of the debris on the basin or pond, the waterfall, and the debris in the Signature Series™ MicroFalls®. Wash down the rocks and gravel with the garden hose and pump out the dirty water. (See fig. 52) You can use the waterfall pump from the kit attached to a scrap section of pipe or a discharge hose purchased from your local hardware store. Continue to wash and pump until the water coming from the pump is relatively clean.

Reinstall the waterfall pump in the MicroPondless™ Vault or MicroSkim® and reconnect the plumbing. Fill it back up to the proper level. The waterfall is ready to be turned back on.

A Few Final Tips...

If you are going to change anything or do a full clean-out, it is best to get that done while the water is still cold, as this will cause the least disruption to your basin's vital balance, leaving less chance for algae growth. Performing these basic house, or should we say basin, cleaning chores every spring will ensure that you will get off to a good, balanced start to the season.



Fig. 52 Wash down the basin rocks to removed matted algae. Start at the top and work your way down, while pumping out the dirty water that is collecting on the bottom. Make sure not to scrub out all the algae; some will prove beneficial in developing your ecosystem.



More great products by Aquascape:

EcoSystems® EcoBlast™

EcoBlast™ is the latest in our water treatment arsenal. EcoBlast™ is the first line of defense to quickly and safely break down algae from waterfalls, streams, rocks, plant pots and anywhere algae build-up has occurred. Start using EcoBlast™ to spot treat the trouble areas on the pond and follow up with S.A.B.™ Extreme on a monthly basis to help keep it clear!

Fast Acting!

EcoBlast™ is not temperature sensitive and can be used during colder temperatures. 100% safe for fish.

EcoBlast™ applications are based on sq.ft. of affected areas:

8.8 oz. treats up to 200 square feet.

38.4 Oz. treats up to 780 square feet.

7 lb. treats up to 2,275 square feet.



EcoSystems® S.A.B. Extreme

Includes
**Activated
Barley®**

S.A.B.™ Extreme is designed to restore balance to the pond ecosystem by breaking down organic material that creates problems for pond hobbyists in and around waterfalls, rocks, stream beds, plant pots, pumps and filtration systems.

S.A.B.™ Extreme is actually 3 products in 1! We have taken the natural ingredients that make up S.A.B.™ and combined them with the degrading powers of Activated Barley™ and the natural biological filtering powers of AquaClearer™ Extreme Dry Bacteria

- Helps break down organic materials that create debris problems around waterfalls, rocks, plant pots, pumps and filtration systems
- Fortified with AquaClearer™ Extreme Dry Bacteria & Enzymes
- Works great in combination with EcoBlast™

8.8 oz. treats up to 2,700 gallons

38.4 oz. treats up to 12,000 gallons

7 lb. treats up to 33,800 gallons



EcoSystems® EcoFloc™

EcoFloc™ clears pond water by combining suspended particulate via a process commonly known as flocculation. Combined particulates are easily removed. It is a 100% safe and natural product, will not harm fish, plants, or wildlife.

8 oz. liquid treats up to 4,000 gallons

23 oz. liquid treats up to 11,500 gallons



EcoSystems® EcoBarley™

EcoBarley™ is an easy to use quick acting pellet. It can be used inside most filters and skimmer systems, as well as set off to the side of the pond. Includes mesh bag for easy application. Tap into the natural degrading power of barley to help create a clear, unfouled pond.

2 lb. box treats up to 3,000 gallons

5 lb. tub treats up to 7,500 gallons



EcoSystems® EcoCarbon™

EcoCarbon™ safely clears tea-colored pond water. EcoCarbon™ is highly effective at removing dissolved organics from the pond water, such as stains and discoloration caused by leaves and organic debris. EcoCarbon™ is also an effective method to remove trace amounts of chlorine and chloramines.

4 lb. treats up to 800 gallons

9 lb. treats up to 1,800 gallons

18 lbs. treats up to 3,600 gallons



For more information on care and maintenance, please refer to Aquascape's *Ecosystem Pond* or *Pond Building for Hobbyists* books or visit www.aquascapeinc.com