AquascapePRO™
Professional Grade Products

PRO-Fit™ System

Signature Series™ MicroSkim®

Installation Instructions & Owner's Manual

- **Step-by-Step Installation Instructions for the Signature Series™ MicroSkim®**

Aquascape™

Made in U.S.A. for:
Aquascape, Inc.
St. Charles, IL 60174 • Brampton, ON L6T 5V7
www.aquascapeinc.com

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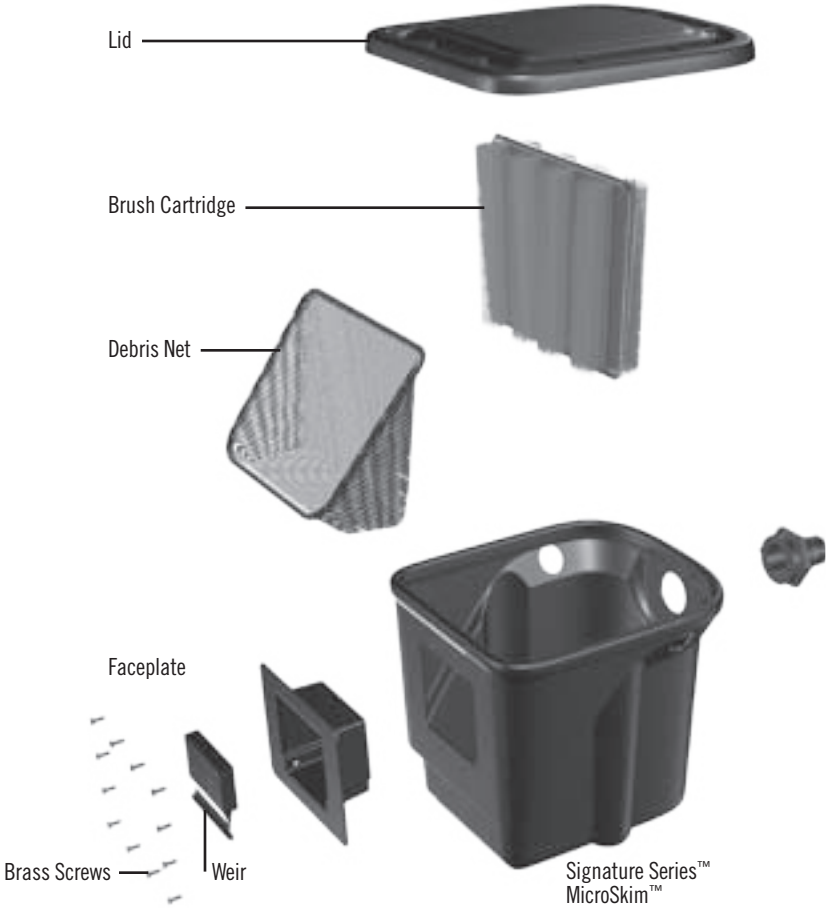
Congratulations on the purchase of the AquascapePro™ Signature Series™ MicroSkim®.

Thank you for choosing an Aquascape PRO-Fit™ System. Because we understand that your needs are different based on your preference, application or design, we want to give you the flexibility of using the different product lines that we offer within the same project without losing the ease of purchasing a kit.

Since the PRO-Fit™ System is designed to be used with different product lines, each PRO-Fit™ System will come with 2 sets of instructions: one for the skimmer (or MicroSnorkel™ and MicroCentipede™) and one for the BIOFALLS® (or Endless Cascades™). During the construction of the pond, you may have to refer to one or the other for the necessary steps.



STEP 1

Locate & Mark Out Your Pond 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.
- 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 the water garden close to a patio, deck, porch, or other hardscape. 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 the water garden is shaped and defined with the 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 Spray paint and outline the shape.

STEP 2

Place filters into position

- Since the BIOFALLS® filter is typically the main waterfall, it should be positioned so it's facing the main viewing areas.
- Make sure it is placed close to the edge of the pond so you can use the pond liner to connect up to the BIOFALLS® filter - unless you're adding a stream. Adding a stream will require the BIOFALLS® filter to be set further away from the pond and will require an extra section of stream liner.
- In order to maximize circulation, the BIOFALLS® filter and Skimmer are ideally placed on opposite ends of the pond, directly across from each other. **(See fig. 2)**

STEP 3

Lay plumbing

- To eliminate the need to dig a trench, lay the PVC flex pipe in place, along the edge of the pond, before excavation.
- The PVC flex pipe can withstand extreme weather conditions so it is unnecessary to dig a deep trench.
- To eliminate the frozen and potentially broken PVC flex pipe, the pipe should be sloping down from the waterfall to the skimmer to help drain as much water from the line as possible.

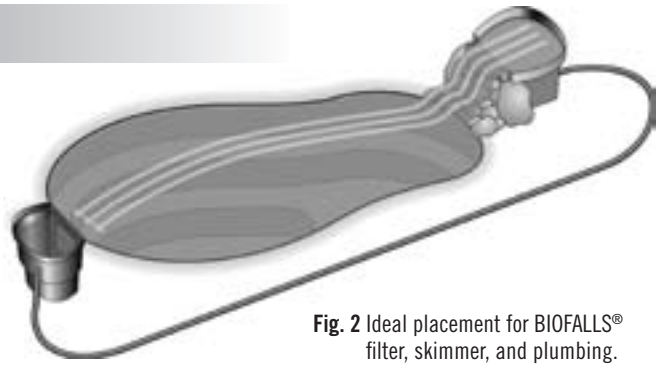


Fig. 2 Ideal placement for BIOFALLS® filter, skimmer, and plumbing.

At this point, please refer to the "Hook Up and Level BIOFALLS® Filter" step of your BIOFALLS®/ Endless Cascade Manual!

STEP 4

Excavate your Pond

The shape and depth

- 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. 3)** or the height of a standard shovel.
- The second is typically down another 8-10" **(See fig. 4)**.
- The third shelf (if desired) will be excavated down another 6" **(See fig. 5)**, reaching a final excavation of 24".
- All of the soil removed from the excavation can be spread and compacted around the BIOFALLS® filter, creating a berm. The filter should be completely surrounded by soil by the end of the project. **(See fig. 6)**

Design spaces for plants

- Design your shelves wider in areas where you wish to place aquatic plants. **(See fig. 8)**
- 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. 8)**
- 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. 8)**
- 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. 8)**
- 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.7)**
- Dig a hole alongside the pond to house the skimmer filter.
- The skimmer should be excavated down to a depth so that the proposed water level in pond is approximately 3/4 inch below the top of the opening of the skimmer. **(See fig. 10 on page 5)**
- Make sure the excavated shelf in front of the skimmer is low enough to provide access to the lower screws on the faceplate.
- Re-check all your measurements, including length and width of pond, plant shelf depth, and overall pond depth.

Fig. 3 Dig entire pond one shovel depth.

Fig. 4 Dig second shelf one shovel depth and start excavation of skimmer hole.

Fig. 5 Dig a third shelf, if desired.

Fig. 6 Soil backfilled around the filter creates a planting berm.

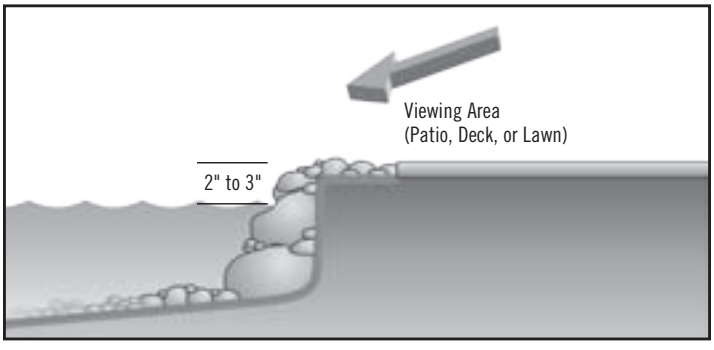


Fig. 7 Set water level 2" - 3" below viewing area.

On the Level

When excavating, it is important to make sure that all of the edges are level. This is not only to avoid an unexpected low edge, but also to make sure that the skimmer sits at the proper height to skim. There are several different methods that can be used to level, depending on the resources that are available. The most accurate method is to use a transit, either sight or laser, and take several readings around the perimeter. Transits need to be rented or bought, however, and may not be the most practical option for a one-time installation. There are two other options that utilize more common household items and may be more convenient. First, you can take a standard 2"x 4" board and lay it across the pond or basin with a common bubble level resting on the center. The level will show if the two sides are even, and all sides can be measured in the same way by altering the angle of the board across the pond. The second method is to use a line level. A line level is basically a small bubble level attached to the end of a string. The other end of the string is then attached to a stake that is placed at any point around the perimeter. The level is then walked around and readings are taken at several different points to ensure the sides are even. Remember, the pond or basin does not have to be perfectly level, but general readings should be taken to avoid any major problems.

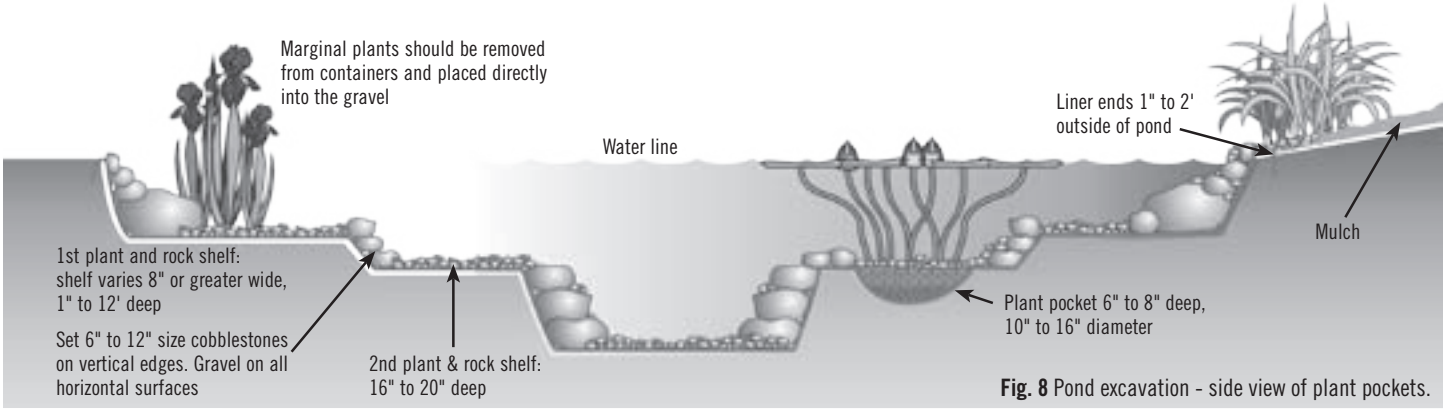


Fig. 8 Pond excavation - side view of plant pockets.

STEP 5

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 pond. Starting from the bottom, remove the slack from the underlayment, making sure it conforms into all of the elevations.
- Place the EPDM Fish-Safe liner on top of the underlayment. **(See fig. 9)**
- The installation process is the same as the underlayment, starting at the bottom and contouring the liner up and out of the pond.
- 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 pond. 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 pond smaller) in areas where there is not enough liner, or simply buying a larger liner.

Fig. 9 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 BIOFALLS® filter.

STEP 6

Installing the MicroSkim®

Set up and level the MicroSkim®

- You've already roughed out a hole approximately 21" x 18" x 18" deep during the excavation phase. Use a 2' bubble level in order to make sure your Signature Series™ 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. 10)**

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

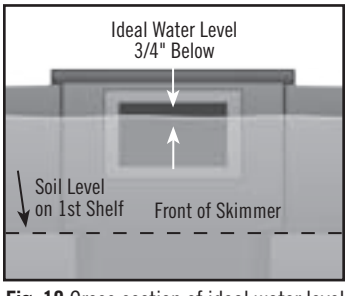


Fig. 10 Cross section of ideal water level viewed from front of skimmer.

cut too much of the liner, which would result in a possible leak. **(See fig. 11)**

- Cut the inner box using a pair of scissors, and insert the skimmer faceplate into the hole. **See fig. 12)**
- Make sure MicroSkim® faceplate is in the upright position. **(See fig. 13)**
- 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. 14)**
- 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. 15)**
- Replace the skimmer faceplate and the two corner screws, and then proceed with the bottom two corners **(See fig. 16)**. 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 8 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. 11 Mark the skimmer opening on liner and cut an area 1.5" inside that mark.

Fig. 12 Place skimmer faceplate through liner and place into skimmer for alignment.

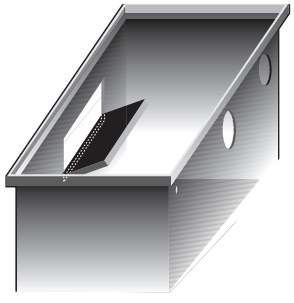


Fig. 13 Skimmer faceplate is properly placed when hinge is on the bottom.

Overflow Installation

- You can now install the PVC slip fitting 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.
- Glue and trench a section of flex PVC 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. 17)**
- A layer of scrap underlayment fabric, soil or sod can be added to cover the drainage area.

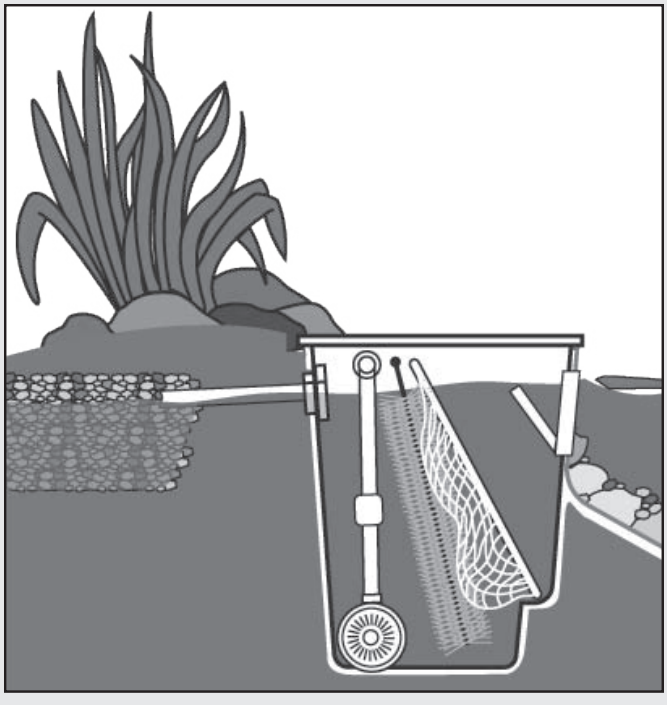


Fig. 17 Single pump and overflow

Fig. 14 Using an awl, poke holes through the liner at screw holes; temporarily screw top corners into place.

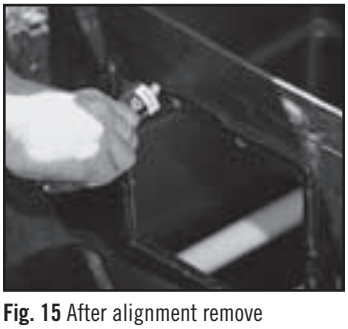


Fig. 15 After alignment remove faceplate and apply silicone sealant.

Fig. 16 Carefully replace the skimmer faceplate into the silicone lined opening.

STEP 7

Add Rock and Gravel

- You can expect to use several tons of stone and gravel for your water feature. Talk to your 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. 18)**
- Be careful when placing any large boulders so you don't damage the liner.
- The opening on the front of the skimmer 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 water flow 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. 19)**

Underwater Lights

- After the boulders are in position, set your underwater lights in between your boulders so they are hidden from view. For the greatest effect, lights should face away from the main viewing area. **(See fig. 20)**
- See lighting system instructions for placement, positioning, and installation of underwater lights.
- 10-watt waterfall lights can be installed in the stream and waterfall later in the project.

Fig. 18 Starting at the bottom, set the largest character boulders first then fill in with the smaller ones.

Fig. 19 Loose gravel should be placed around the lily to keep the soil from being stirred up in the pond after the water is added.

Fig. 20 Set your underwater lights in between your boulders so they are hidden from view.

STEP 8

Wash Rocks and Gravel

- Using a garden hose, rinse the rocks and gravel from the highest part of the pond down to the bottom.
- Place an AquascapePro clean-out pump or the pump purchased with the pond kit in the lowest area of the pond. Use discharge hose or an extra section of PVC Flex pipe to pump the muddy water. This step helps the pond clear up faster.

STEP 9

Installing the Pump and Plumbing

Connect the pump plumbing kit to the pump and tighten all clamps before lowering into the MicroSkim®. The plumbing assembly includes a threaded union disconnect that will allow you to remove the pump when needed.

- 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. 21)**
- The pump's electrical cord can be set in the slot located in the back, top edge of the skimmer.
- 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. 21 Choose the plumbing hole that is most convenient. Pass the pipe through the opening on either side of the MicroSkim®.

STEP 10

Fill Pond

Fill up the pond with water, just below the level of the overflow in the skimmer.

For more information on care and maintenance, please refer to the Owner's Manual included with this skimmer or Aquascape's *Pond Building for Hobbyists* book. Also visit www.aquascapeinc.com

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