



Water Garden Instruction Manual

Includes Products:

PS3900

PS4600

PS7000

PS15000

BF1600

BF1900

BF2600

BF3800

1.330.274.8317

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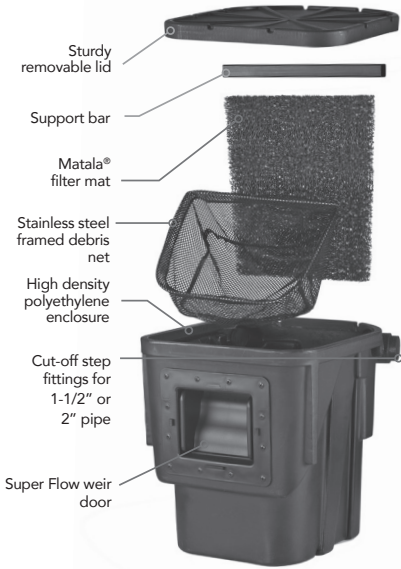
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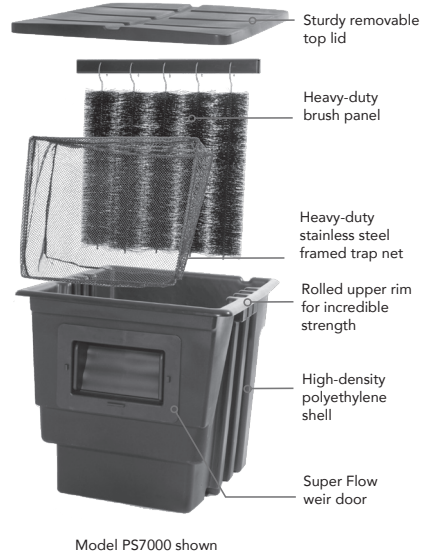
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| SKIMMERS & FILTERFALLS COMPATIBILITY CHART | | | | | |
|--|----------------|-----------------------|-----------------|---------------|----------------------|
| MODEL | SPILLWAY WIDTH | PRODUCT DIMENSIONS | PUMP RANGE | BULKHEAD SIZE | MAX. POND VOLUME |
| BF1600 | 16" | 21½"W x 19½"D x 21½"H | 1,000-3,900 gph | 1½" | 1,250 gal |
| BF1900 | 19" | 28"W x 25"D x 21½"H | 2,500-4,000 gph | 2" | 2,000 gal |
| BF2600 | 26" | 34½"W x 25"D x 23"H | 4,000-6,000 gph | 2" | 4,000 gal |
| BF3800 | 38" | 46½"W x 30"D x 23"H | 6,000-8,000 gph | 3" | 8,000 gal |
| MODEL | WEIR DOOR | PRODUCT DIMENSIONS | PUMP RANGE | SQ. FT RATING | INTERNAL WATER DEPTH |
| PS3900 | 6" | 17¾"W x 19½"D x 19½"H | 1,000-3,900 gph | 200 | 14½" |
| PS4600 | 6" | 19"W x 26"D x 22"H | 2,000-4,000 gph | 400 | 15½" |
| PS7000 | 9" | 25"W x 30"D x 24"H | 4,000-7,000 gph | 900 | 17½" |
| PS15000 | 14" | 28"W x 33"D x 31"H | 7,000-15,000 gp | 1400 | 24½" |

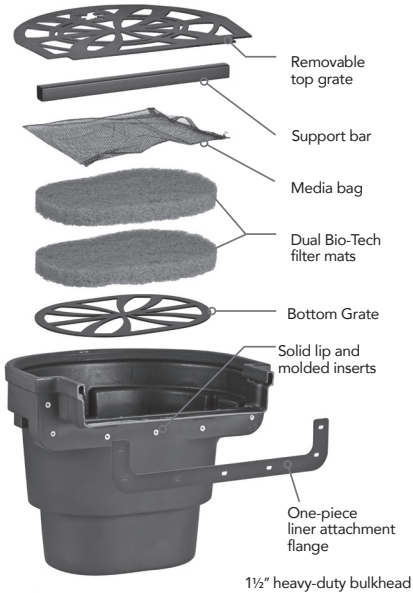
Skimmer PS3900



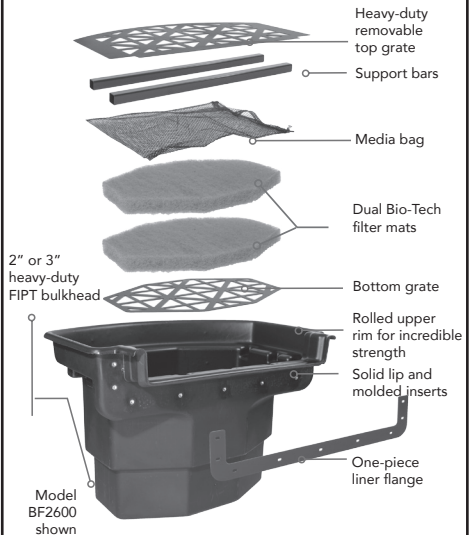
Skimmer PS4600/7000/150000



FilterFalls BF1600



FilterFalls SP1900/2600/3800



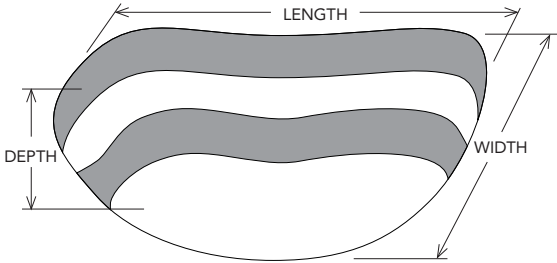
POND VOLUME

It is important to calculate the estimated water volume before you begin construction, and then re-calculate final water volume when your project is completed. Estimating water volume pre-construction is a step that is often skipped by many homeowners and contractors. A water garden with undersized filtration can prove to be a maintenance nightmare.

Use the product specification/cross reference guide on page 2 to verify the maximum pond volume and flow rates for Oasis and Pro Series Equipment.

TO DETERMINE POND VOLUME

Multiply (in feet) the average length x the average width x the average depth to find cubic feet of pond volume. Multiply cubic feet x 7.48 = gallons



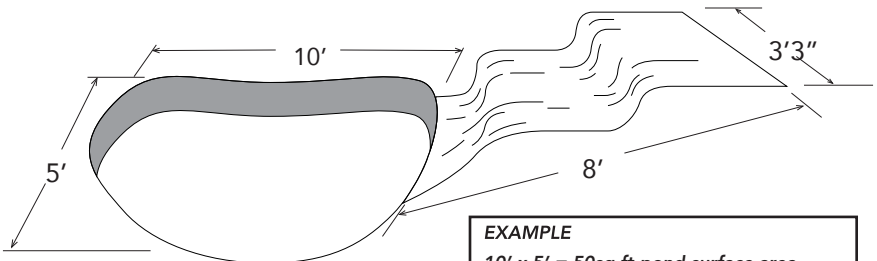
SURFACE AREA

When using any pond skimmer it is important to keep the surface area (in square feet) of the pond in mind. Upon start-up, the pump sends water from the bottom reservoir to the top of the waterfall and/or streambed. The water must then fill, from top to bottom, the waterfalls and streambed until it eventually re-enters the pond and the water levels equalize. During the water in transition process, the water level of the bottom reservoir is continually dropping. If the streambed is built improperly, or is built too big, the water level of the bottom reservoir could drop below the opening in the skimmer before the water levels equalize. This would result in the pump running dry and starving for water.

This situation can be easily avoided by using the formula provided to calculate the surface area of your pond. With that number, you can then determine the maximum surface area of waterfalls and streambed that your pond can accommodate.

TO DETERMINE SURFACE FOOTAGE

Multiply (in feet) the average length x the average width = total square feet of the pond surface area. Multiply the surface area of the pond x .5 = maximum surface area for falls



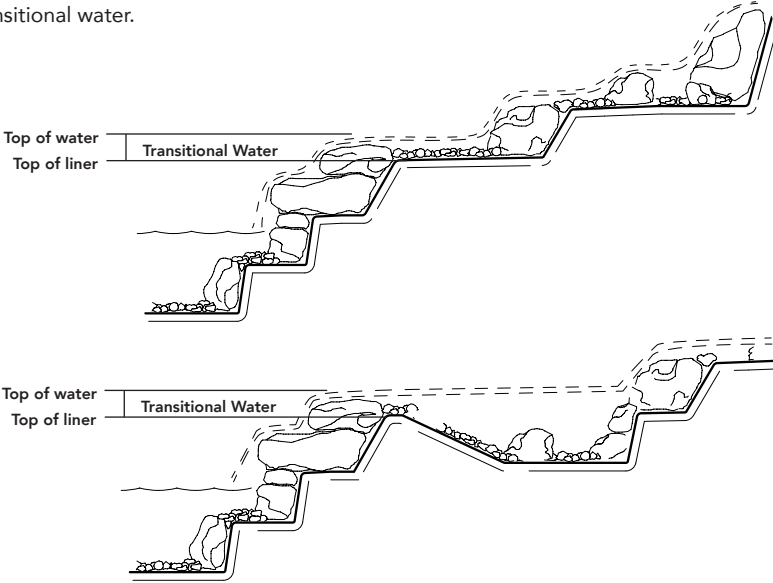
EXAMPLE

$10' \times 5' = 50\text{sq ft pond surface area}$

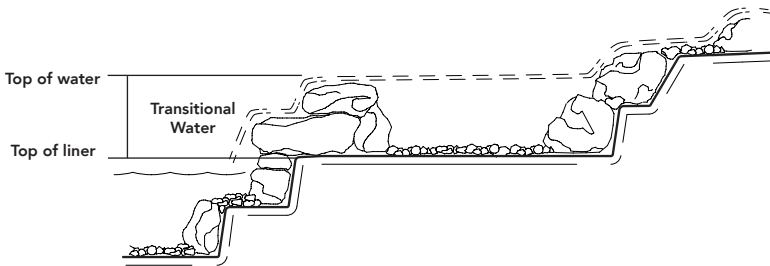
$50\text{sq ft} \times .5 = 25\text{sq ft stream surface area}$

STREAMBED CONSTRUCTION

Using proper streambed construction techniques can limit the transitional water needed to fill the streambed and enables the system to function optimally. Transitional water is determined by the height that the weir rock extends above the liner at the spillway opening. Maintaining the shortest distance possible between the top of the weir rock and the liner is a crucial component to a properly functioning water garden. The drawings below displays two examples of proper construction techniques for minimal transitional water.



Below is an example of improper streambed construction. Stone, gravel and foam can be combined to make a barrier and create a waterfall, but that barrier will never be water-tight. When the pump is turned off, the water will always drain down to the highest point of the liner. Improper construction greatly increases the water in transition.



PLACEMENT OF THE FILTERFALLS AND SKIMMER

Now that you have determined the size of the pond, waterfalls and filter system, it is time to determine the placement of the components.

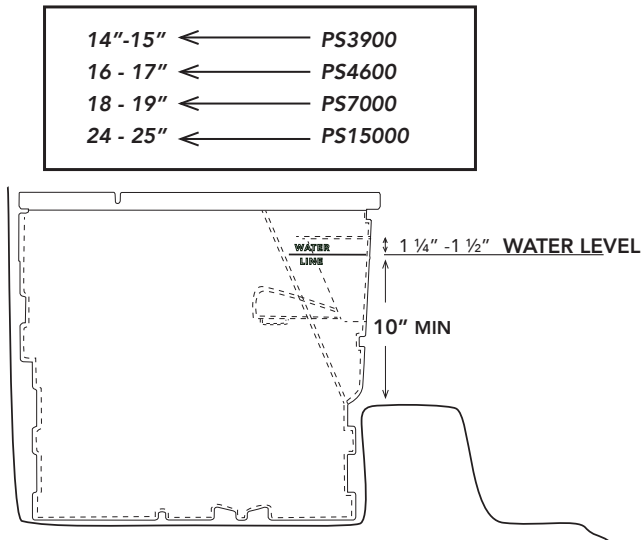
Whenever possible, it is best to position the Skimmer and FilterFalls directly across from each other at opposite ends of the pond. This setup creates a current that pulls surface debris into the Skimmer. If the Skimmer and FilterFalls are placed too close together, or the pond has an unusual shape, dead areas can occur. These dead areas can be eliminated with the use of multiple falls or multiple skimmers.

Skimmer Installation

EXCAVATING AND SETTING THE SKIMMER

Prior to setting the skimmer you must first determine the surface level of the water in the pond. Once you have this number you can excavate for the Skimmer. The excavation should be a few inches wider and longer than the Skimmer body. Find your model number below to determine the approximate depth of the hole.

Do not dig too deep. The skimmer should be set on undisturbed earth if possible. In the case that you over-dig, be sure to compact the soil thoroughly to prevent settling. The bottom of the hole should be level side-to-side and front-to-back.



Place the Skimmer enclosure into the excavated hole. Check the top of the enclosure to make sure that it is level front-to-back and side-to-side. Check where your pre-determined water level falls on the face of the Skimmer enclosure. The water level needs to be between 1 1/4" and 1 1/2" below the top of the weir door opening and even with the water level indicator molded on the side of the Skimmer. (PS15000 only)

Make sure that any unexcavated soil that is left in front of the Skimmer is at least 10" below water level. See the drawing above. This will ensure that there is enough room for the weir door to be installed and function properly.

Before you go any further into the Skimmer installation, place a few stones inside the Skimmer enclosure to weigh it down and keep it from moving. Install the solid support bar(s) and begin backfilling. The support bar(s) must be in place for the enclosure to retain its shape during the backfilling process. Loosely backfill the enclosure on all sides, lightly compacting as you go. Do not over-compact the soil. Aggressive compaction may deform the enclosure and cause components to fit improperly.

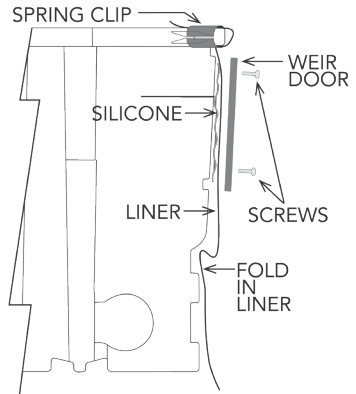
ATTACHING THE LINER

Hold the liner up against the face of the Skimmer, allowing a minimum of 2" to extend above the top of the enclosure. Leave some slack in the liner below the weir opening. This will help avoid any future strain on the liner connection.

Make sure that the front surface of the Skimmer and the back side of the liner are clean and free of debris.

When you are satisfied with the position of the liner, clip it in place with the provided spring clips. With a sharp razor knife, cut a hole in the liner for the weir door using the hole in the face of the Skimmer as a guide. When you are finished, remove the spring clips and pull the liner away from the face of the Skimmer. Apply Atlantic's fish-safe RTV Silicone Sealant around the weir door opening on all four sides.

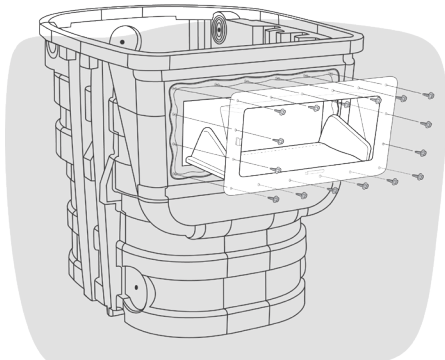
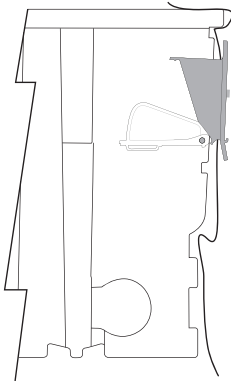
Apply the silicone in a consistent bead approximately 3/4" away from the opening itself, directly on top of the bolt holes. Once you are finished, you can return the liner to its original position and replace the spring clips.



ATTACHING THE WEIR DOOR

Unlatch the weir door and lower the door to its fully open position. Insert the weir door assembly into the Skimmer opening and push the weir door frame tight against the Skimmer face.

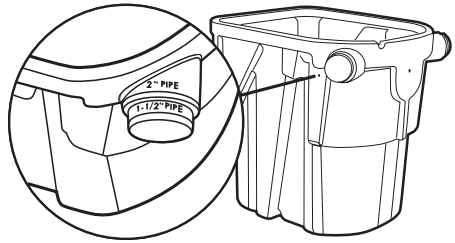
Line up the holes of the weir door frame with the holes in the Skimmer face. Use a nail or an awl to help line up the holes and pierce the liner in the top corners. Loosely fasten the top corners using two of the supplied 1/4-20 machine screws and serrated flange nuts. Next, install two screws in the bottom corners of the weir door frame. Once you have the weir door tacked at the corners, install the rest of the screws. Do not fully tighten any screws until all of the screws have been installed.



Use your fingers to hold the flange nut and a hand held screwdriver to tighten the screws. The serrations on the flange nut will grab the plastic enclosure once it makes contact, eliminating the need to use a wrench. Use caution when tightening the screws. The screws need only be snug for the silicone to make a seal.

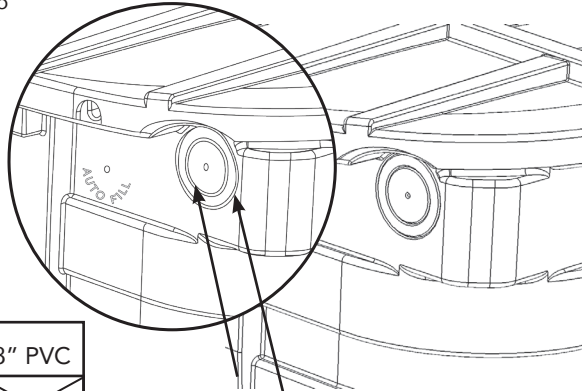
PLUMBING THE PS3900

The PS3900 Skimmer has pump discharge step fittings molded into each side of the skimmer enclosure. The step fittings are labeled for 1 1/2" or 2" PVC pipe and have cut lines molded in for each size. Choose the step fitting on the side of the skimmer that will be best suited to exit based on this installation. Using a PVC saw or standard hack saw, remove the end of the step fitting (making sure to follow the molded cut line) for the size pipe used for this water feature. Once completed, push one end of the PVC supply line through the step fitting allowing approximately 10" of pipe to enter the skimmer enclosure.



PLUMBING THE PS4600/7000/15000

None of the Big Bahama Pro Series Skimmers come with a pre-drilled pump outlet. Not having a pre-drilled pump outlet gives the professional installer the flexibility to choose which side of the enclosure to exit and with what size pipe. Drill-points have been provided on all Big Bahama models to show the proper location for drilling the outlet. See right drawing for drill-point locations and hole sizes. Using the drill-points ensures that the pipe outlet will be above water level.



| | 2" PVC | 3" PVC |
|---------|--------------------|--------------------|
| PS4600 | 2 1/2" Hole Saw | |
| PS7000 | 2 1/2" Hole Saw | 3 3/4" Hole Saw |
| PS15000 | 2 1/2" Hole Saw | 3 3/4" Hole Saw |

It is recommended that you install a TR215CV Triton Check Valve between the pump and the supply line. This valve will prevent the FilterFalls from draining when the pump is off, which keeps the beneficial bacteria alive and any debris that the FilterFalls has collected from back flowing into your pond. Refer to the Triton Check Valve installation instructions on page 11 for further details.

A drill point is provided on both sides of the Skimmer to show the proper location for the installation of an AF1000 Auto Fill valve (not included). See the Auto Fill installation instructions on page 12 for more information. There is a drill-point provided on the back of the Skimmers to show the proper location and elevation for the installation of an overflow (not included). See the Overflow installation instructions on page 13 for more information.

Drill-points for the pump discharge are provided on both sides of all Pro Series Skimmers. Cut lines for 2" and 3" pipe are provided on the PS15000 only.

FilterFalls Installation

BULKHEAD INSTALLATION

It is recommended to install the bulkhead fitting and Male Thread Adapter (MTA) (included) before setting the FilterFalls. Pro Series FilterFalls are not pre-drilled for the bulkhead fitting. Not having a pre-drilled pipe inlet gives the professional installer the flexibility to choose which panel of the FilterFalls to enter. Drill-points have been provided to indicate the proper height to drill for the bulkhead fitting. Information has been provided below to show which bulkhead is supplied and what size hole saw should be used. (Note: If you are installing an optional BFK100 Back Flush Kit (Pro Series only), this is a good time to drill for the bulkhead fittings.) See the Back Flush installation instructions on page 14 for more information.

Remove the retaining nut and plastic friction washer, leaving the rubber gasket on the body of the bulkhead fitting. Note that the retaining nut is reverse threads. Turn clockwise to loosen.

From the inside of the FilterFalls, insert the threaded end of the bulkhead into the hole on the back of the enclosure. This will sandwich the rubber gasket between the flange of the bulkhead and the inside wall of the enclosure. Slip the friction washer over the threaded end of the bulkhead on the outside of the enclosure and install the retaining nut. Tighten the retaining nut by hand and then finish off with a half turn from a wrench. Note that the retaining nut is reverse threads. Turn counterclockwise to tighten.

| MODEL | 1½" Bulkhead | 2" Bulkhead | 3" Bulkhead |
|--------|--------------|-------------|---------------|
| BF1600 | X | | |
| BF1900 | | X | |
| BF2600 | | X | |
| BF3800 | | | X |
| | Pre-drilled | 3" Hole Saw | 4.5" Hole Saw |

SETTING THE FILTERFALLS

It is always recommended that the FilterFalls be placed on undisturbed soil if possible. If the installation calls for the FilterFalls to be elevated above existing grade, it is critical to compact the area thoroughly. This will ensure that the FilterFalls will not settle out-of-level over time. The use of cinder blocks or bricks under the falls to raise it up will help reduce the chance of settling.

The FilterFalls can be placed adjacent to the pond edge to create a single waterfall, or pulled away from the pond to create a streambed effect. Refer to the surface area recommendations on page 3 to ensure that the streambed is properly sized.

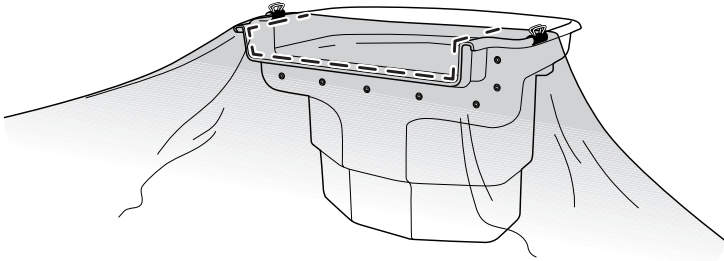
Once you have placed the unit, make sure it is level from side to side and check the level from front to back. FilterFalls should always be installed tilted slightly forward about ¼". This will ensure that water never leaks out over the back of the enclosure. When you are finished positioning the unit, weigh it down with a few rocks to keep it in place while you backfill and make your liner and plumbing connections. Apply silicone on the threads of the MTA. Screw the MTA into the bulkhead until tight. Use PVC Glue (not included) to glue the PVC flex hose into the MTA.

Do not completely backfill the FilterFalls until all of your plumbing connections are made and the liner has been attached.

LINER ATTACHMENT

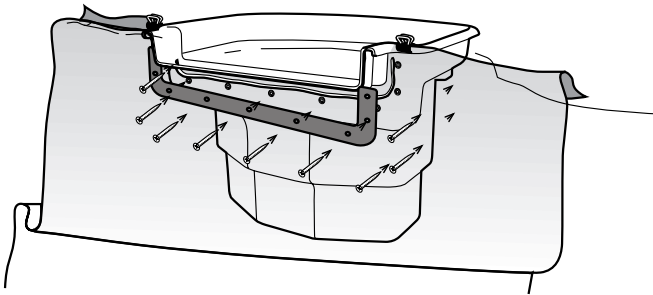
Atlantic FilterFalls come equipped with a solid spillway, threaded inserts and a 'U' shaped wrap-around flange to provide the best possible seal.

Start by positioning the liner. Pull the liner up the face of the FilterFalls and drape a minimum of 6" of liner over the top of the enclosure. Use the provided spring clips to temporarily hold the liner in place. Leave some excess slack in the liner below the spillway. This will help to alleviate any future strain on the liner connection. With the liner firmly in place, use a sharp razor knife to cut the spillway opening in the liner using the inside of the spillway as a guide.



Remove the spring clips and pull the liner away from the face of the enclosure. Make sure that the front of the FilterFalls and the back side of the liner are clean and free of debris. Apply a consistent bead of Atlantic fish-safe silicone to the face of the FilterFalls along the center line of the threaded inserts.

Return the liner to the face of the FilterFalls and hold it in place by attaching the spring clips to the rolled lip on either side of the spillway.



Attach the liner flange to the FilterFalls, starting with the center screw first, and then work out toward the sides of the spillway. It may be necessary to first pierce the liner with a nail or an awl before inserting the screw. Do not fully tighten any screws until all the screws have been installed. Once completed, trim away any excess liner as needed.

Tighten flange screws with a hand held screwdriver only. Over tightening the screws could strip out the inserts or crack the liner flange. The screws need only to be snug for the silicone to make a seal.

Accessories

TRITON CHECK VALVE

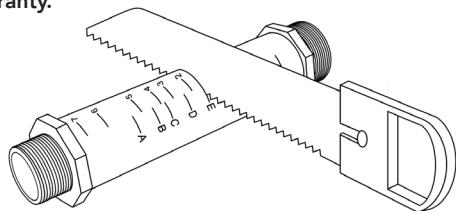
Locate the model number of the Atlantic Skimmer and TidalWave pump used for this installation on the chart on the next page. Follow the corresponding column down and row across until they intersect. The number or letter at the intersection point is the 'perfect cut' reference mark for this installation. If the corresponding reference mark is a letter, then the 1½" threaded end of the discharge pipe will be used. If the corresponding reference mark is a number, then the 2" threaded end of the discharge pipe will be used.

DISCHARGE PIPE 'PERFECT CUT' REFERENCE CHART

| | PS3900 | PS4600 | PS7000 | PS15000 |
|--------|--------|--------|--------|---------|
| TT1500 | B | D | H | H + EXT |
| TT2000 | B | D | H | H + EXT |
| TT3000 | B | D | H | H + EXT |
| TT4000 | B | D | H | H + EXT |
| TT5000 | 0 | 2 | 5 | 5 + EXT |
| TT6000 | 0 | 2 | 5 | 5 + EXT |
| TT9000 | N/A | N/A | 4 | 4 + EXT |
| TW1200 | B | D | G | G + EXT |
| TW1900 | B | D | G | G + EXT |
| TW2400 | B | D | G | G + EXT |
| TW3700 | A | C | F | F + EXT |
| TW4800 | A | C | F | F + EXT |
| TW6000 | 1 | 2 | 5 | 5 + EXT |
| SH1450 | E | G | I | I + EXT |
| SH2050 | E | G | I | I + EXT |
| SH3600 | E | G | I | I + EXT |
| SH5000 | C | D | H | H + EXT |
| SH6500 | C | D | H | H + EXT |
| PAF-20 | 3 | 4 | 7 | 7 + EXT |
| PAF-25 | 3 | 4 | 7 | 7 + EXT |
| PAF-40 | 3 | 4 | 7 | 7 + EXT |
| PAF-75 | 3 | 4 | 7 | 7 + EXT |
| A-05 | 3 | 5 | 7 | 7 + EXT |
| A-05L | 2 | 4 | 6 | 6 + EXT |
| A-21 | 2 | 4 | 6 | 6 + EXT |

Shaded areas denote pumps that exceed maximum flow rates or dimension for use with the corresponding Skimmer. Use of this equipment combination is not recommended and could void the warranty.

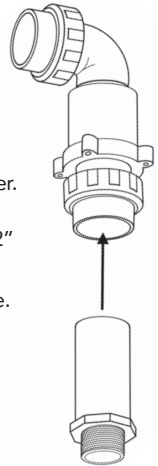
Locate the correct reference mark for this installation on the discharge pipe. Using a hacksaw or PVC saw, cut the pipe at this mark being careful to make a clean, square cut. Discard the end of the discharge pipe that will not be used.



Use a small piece of sandpaper to smooth out the cut end of the discharge pipe. Clean the 2" socket fitting on the bottom of the check valve and the cut end of the discharge pipe with PVC cleaner/primer. Apply PVC glue and insert the discharge pipe into the 2" socket fitting. Hold the discharge pipe firmly in place for a few seconds, giving the glue time to set. Attach the Triton Check Valve to the TidalWave pump by threading the discharge pipe into the pump discharge.

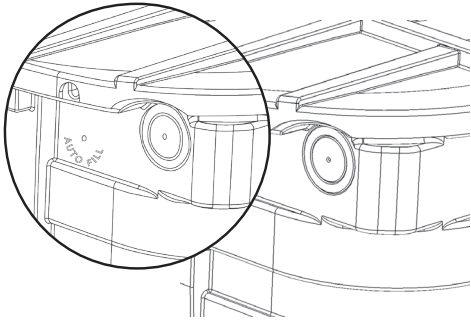
Place the TidalWave pump with installed Triton Check Valve into the Skimmer. Connect the outlet fitting of the Triton Check Valve to the PVC supply line that feeds the waterfall using PVC glue and cleaner. For your convenience; 2" and 1 1/2" outlet fittings are supplied with the Triton Check Valve.

Complete installation by tightening the union nuts on the Triton Check Valve. For more detailed instructions, refer to the instruction booklet included with the check valve.

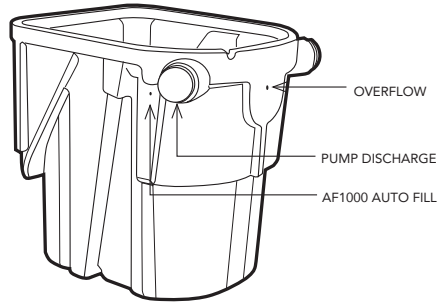


AF1000 AUTO FILL KIT

Drill points have been provided for the proper Auto Fill location on either side of the Skimmers. It is a good idea to completely install the pump, check valve assembly, and discharge hose before you drill for the Auto Fill. This will help you determine the best side of the Skimmer to place the Auto Fill so that it has proper clearance on all sides.

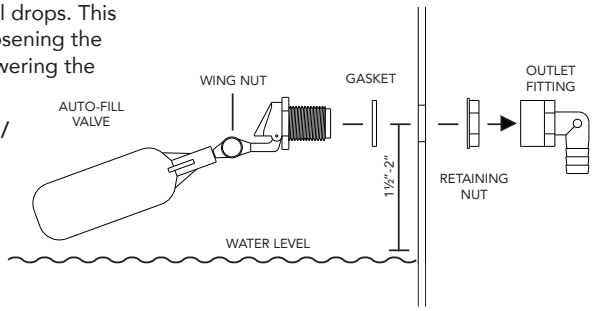


Once you have determined the location of the Auto Fill, drill a 3/8" hole using a spade bit or hole saw. Insert the Auto Fill, making sure the gasket is on the water side of the unit, and the plastic retaining nut is on the outside. Thread the retaining nut onto the Auto Fill Valve, being careful not to over-tighten.



The Auto Fill Kit includes fittings for connection to a garden hose, 1/2" irrigation line, and 1/2" Sch 40 PVC. Wrap the 1/2" male threads on the Auto Fill with thread sealant and install the fitting of your choice. Once water is supplied to the Auto Fill it will maintain the set water level by automatically adding water when the level drops. This level can be adjusted by loosening the wing nut and raising and lowering the height of the Auto Fill float.

Flow Rate: 0.5 to 1.5 gpm / Inlet Pressure: 80 psi max



OVERFLOW

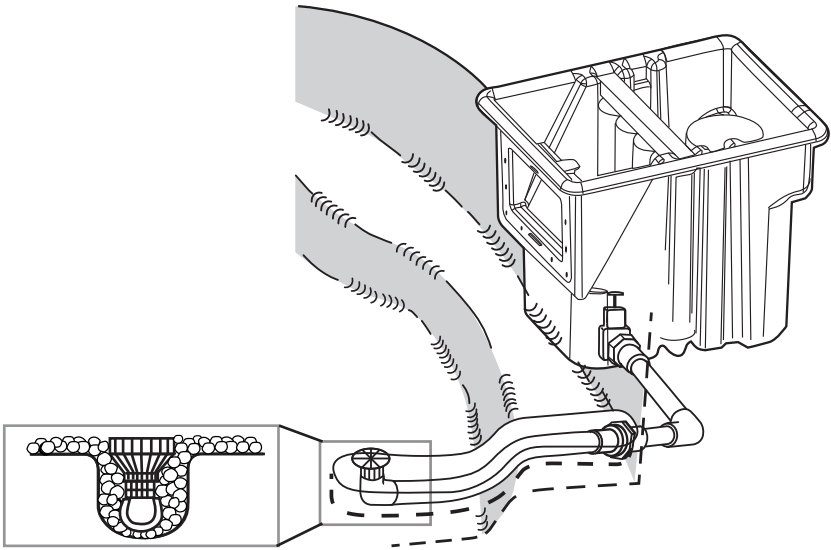
A drill-point has been provided on the back of the Skimmers to show the proper location and elevation to install an Atlantic HA2000 bulkhead fitting and 2" MTA for the overflow (not included). This combination will position the bottom of the overflow pipe approximately 1" above recommended water level. (Note: If a HA2000 bulkhead is not being used, the center point for the hole will have to be recalculated on site.)

Drill a 3" hole and install the bulkhead following the instructions on page 9. Install a 2" MTA and connect the overflow pipe. Apply silicone on the threads of the Male Thread Adaptor (MTA). Screw the MTA into the bulkhead until tight. Use PVC Glue and cleaner (not included) to glue the PVC flex hose into the MTA.

BOTTOM DRAIN KIT

The BD2000 Bottom Drain Kit contains all the necessary fittings to properly install a bottom drain. 2" flexible PVC pipe must be furnished by the end user to complete installation.

The bottom drain should be installed in the lowest point of the water garden. When installing a bottom drain in a new pond it is helpful to dig a 4" deep trench from where the bottom drain pipe will enter the pond to the intake screen location. The liner can then be installed and depressed into the trench. The bottom drain pipe can then be nestled in that depression and easily camouflaged with gravel and stone.



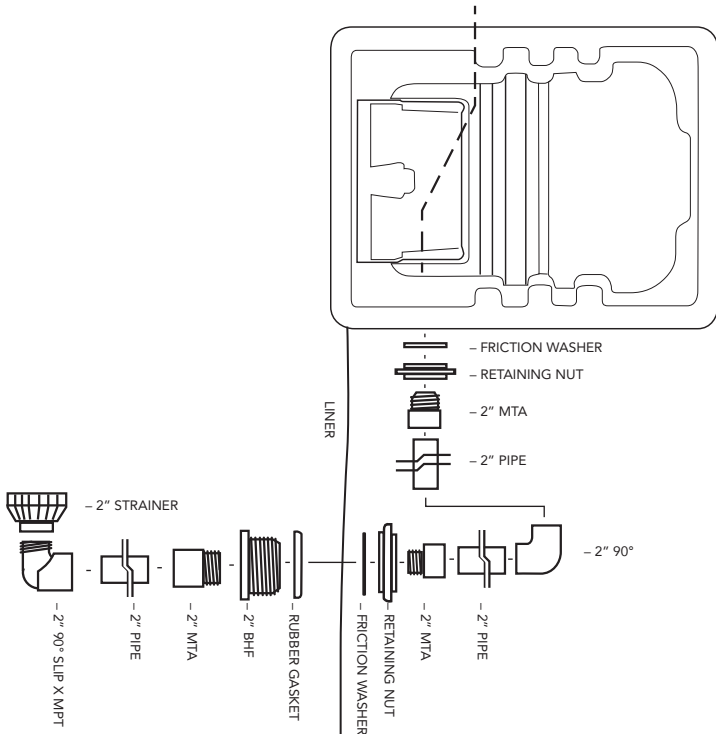
Drill-points have been provided on all compatible Skimmer models to show the proper location for the bulkhead fitting. See Figure 17. Drill the hole with a 3" hole saw and install the bulkhead following the bulkhead installation instructions on page 9.

Install a 2" MTA into the bulkhead on the outside of the Skimmer box. Be sure to wrap all threaded fittings with thread sealant. Next, glue a 2" elbow to one end of a 12" length of pipe and glue the other end into the MTA with the elbow turned toward the liner. (All pipe lengths may be adjusted to fit your particular application).

Insert, but DO NOT GLUE a short piece of pipe (4" or so) into the open end of the elbow. Use this pipe to determine the exact location to pierce the liner with the bulkhead. Cut a 3" hole in the liner at that location. Install the bulkhead with the rubber gasket inside the pond and the friction washer and retaining nut outside. Once completed, insert a 2" MTA in both ends of the bulkhead. Measure and cut the correct length of pipe to join the MTA on the outside of the liner to the 2" elbow. Glue the pipe in place.

Thread the intake screen onto the 2" threaded street 90° and place the screen in its desired location. Measure for the correct length of pipe to join the 90° to the MTA that you installed in the pond side of the bulkhead. Cut and glue the pipe into both fittings.

Thread the pipe nipple into the bulkhead inside the skimmer box. Slip the gate valve onto the pipe end of the nipple. DO NOT GLUE this connection. Not gluing this connection gives you the ability to remove and service the gate valve if necessary. Cover the drain pipe inside the pond with stone and gravel to complete installation.

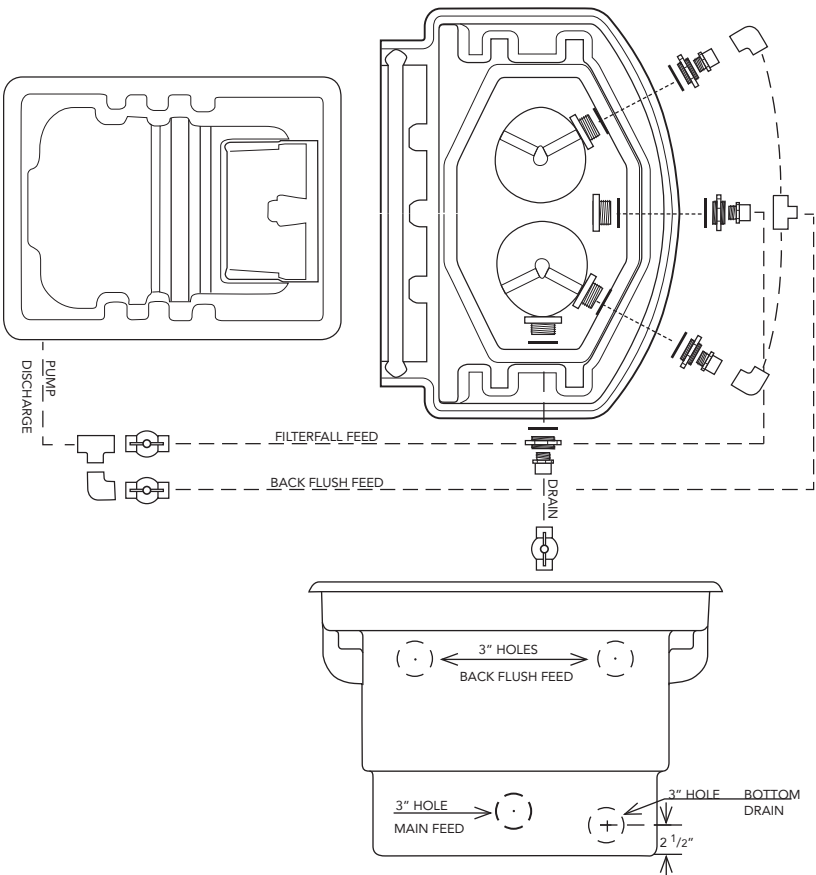


BACK FLUSH KIT

If you are installing the BFK1000 in a new construction project it is a good idea to drill the holes and install the 2" bulkheads and male thread adaptors before you set the FilterFalls. Drill-points have been provided below the rock ledge on two of the back filter panels for the back-flush feed inlets. Drill the holes using a 3" hole saw and install the bulkheads. Follow the bulkhead installation instructions on page 9.

Find the best location for the bottom drain outlet. Drill-points are not provided for the bottom drain bulkhead location. The bottom drain can be installed in any of the open panels on the bottom of the FilterFalls. The center point of hole should be drilled 2½" up from the bottom of the FilterFalls and centered from side to side on one of the panels. Drilling the hole 2½" up will position the bulkhead as low as possible.

Install the bottom drain bulkhead and follow the plumbing diagram to complete the installation. Note: Three stage mataala filter kits are available for all FilterFalls. Mataala filters will greatly increase the effectiveness of the back-flush kit.





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