



Atlantic®

Product Manual



PV1700 / PV1800 / PV2300 / PV18EXT / PV23EXT /
SP1600 / SP1900 / SP2600 / SP3800

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Pond-free Features

Pond-free features exchange the open water of the pond for a gravel-topped excavation, maximizing visual impact while minimizing headaches and maintenance. Typically, a pump placed in a protective vault inside a lined reservoir continuously recirculates water over a stream or waterfall. A bed of gravel hides the basin, vault and plumbing from view, leaving only the stream and waterfall visible.

Eco-Blox Reservoirs

Upon start-up, the pump draws water from the reservoir to fill the streambed, from top to bottom, until the water overflows back into the reservoir to complete the cycle. We call the amount of water needed to complete this cycle the 'transitional' water volume. If the reservoir is too small, or the streambed built improperly, the water level in the reservoir can drop below the top of the pump before cycling, leading to pump overheating and damage. We can calculate the transitional water volume, then design the reservoir to hold at least three times as much, so the water level in the reservoir never drops by more than one-third when the pump is turned on, keeping the pump safely submerged at all times. Assuming that it will take about 3' or 0.25 ft. of water to fill the stream and get the system recirculating, we can calculate the transitional volume, minimum reservoir volume and Eco-Blox quantity by using the formulas below:

$$\text{Stream Depth(.25ft)} \times \text{Avg. Length(ft)} \times \text{Avg. Width(ft)} = \text{Transitional Volume}$$

$$\text{Transitional Volume} \times 3 = \text{Minimum Reservoir Volume}$$

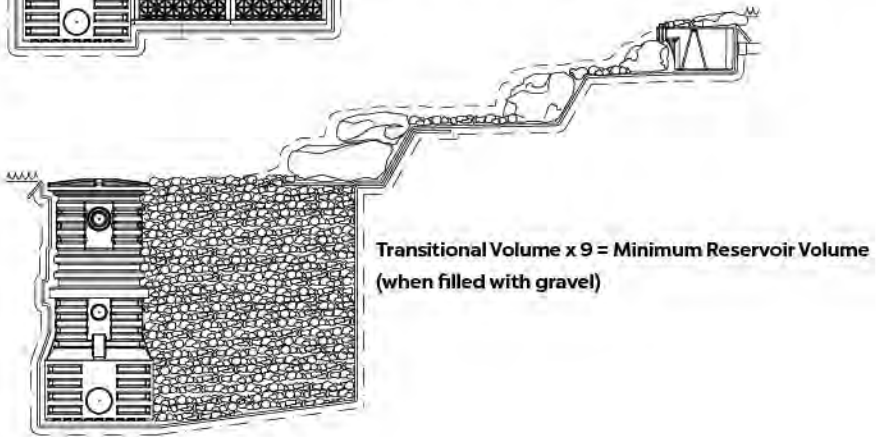
$$\text{Minimum Reservoir Volume} \div 4.2 = \text{Number of Eco-Blox to fill Reservoir}$$

WATER DEPTH CONVERSIONS

1" deep = 0.08'	3" deep = 0.25'	5" deep = 0.42'
2" deep = 0.16'	4" deep = 0.33'	6" deep = 0.50'

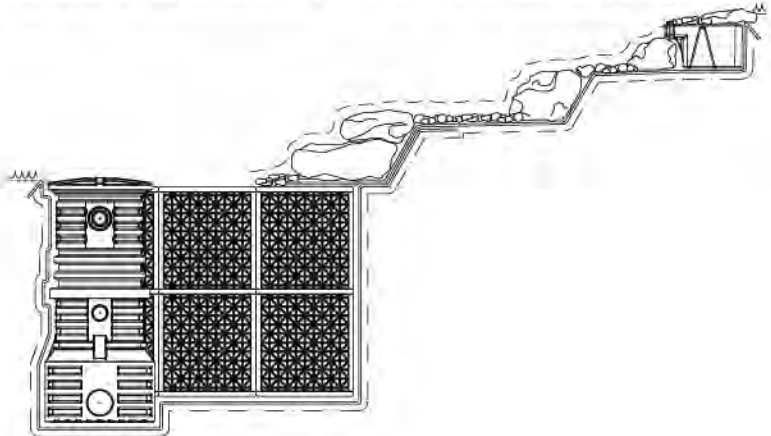
Gravel-Filled Reservoirs

Because Eco-Blox are 96% void space, they allow the reservoir to be dug to just the size required for the water volume needed. Backfilling with gravel fills 65% of the reservoir with stone, leaving only the 35% that remains between the stones available for water storage. This means that a gravel-filled basin will need to be three times larger than an Eco-Blox basin to hold the same volume of water. That's a lot more time, excavation, additional soil removed, additional gravel to fill the hole, labor costs and cleanup.



For Larger Basin Volumes

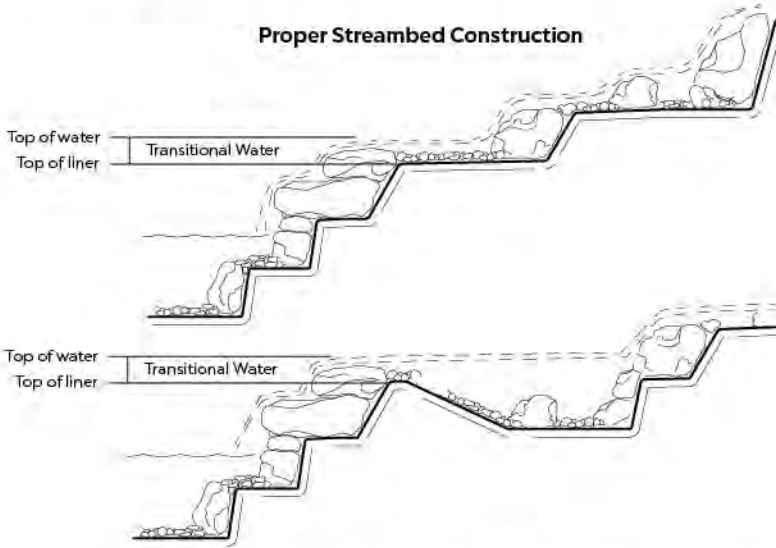
For installations where a larger basin volume or a deeper basin is required, Atlantic offers Pump Vault Extensions for both the PV1800 and PV2300. Each additional layer of Eco-Blox increases the depth of your excavation by 17.5"; use one Extension for each additional layer.



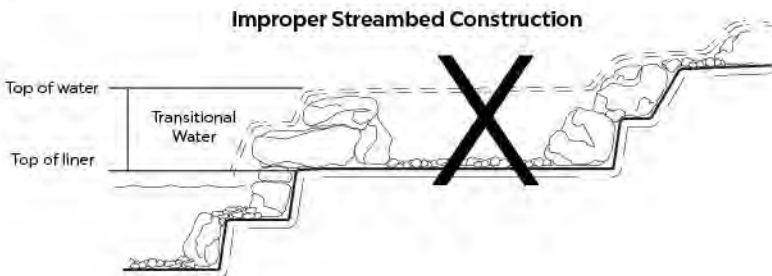
Streambed Construction

The less the water level in the basin drops as the pump turns on and the stream fills, the better for proper function. Proper streambed construction can reduce the amount of water needed for this transition.

Since transitional volume is determined by how high the rock extends above the liner at the spillways, minimizing that height reduces the amount of water necessary to fill the streambed. The drawings to the right display two examples of proper streambed construction to keep the transitional water to a maximum of 3-4" in depth.



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 watertight. When the pump is turned off, the water will always drain down to the highest point of the liner. Improper construction greatly increases the amount of transitional water.

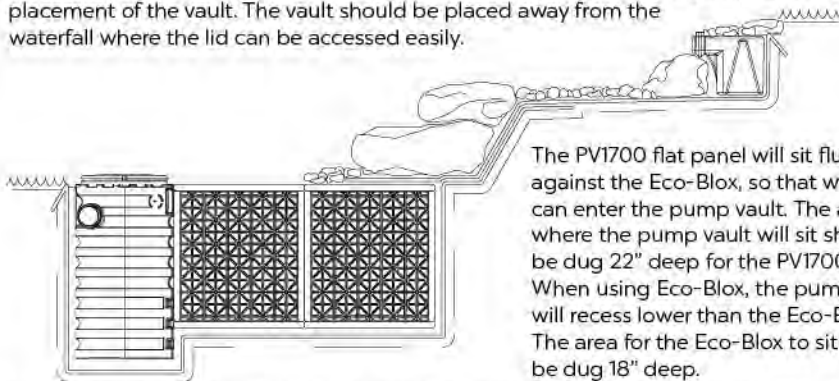


PV1700 Pump Vault Installation

The PV1700 is Atlantic's most compact, easy to install pump vault. The PV1700 features an incredibly strong enclosure, recessed panels on the front that can accommodate Triton 3-Way Diverters, cut lines on the back for 1½" and 2" pump discharges, and marked drill points on the left and right sides for an Auto Fill.

Excavating and Setting the PV1700 (Pond-free System)

Once you have determined the proper size basin for your project, begin by deciding the placement of the vault. The vault should be placed away from the waterfall where the lid can be accessed easily.

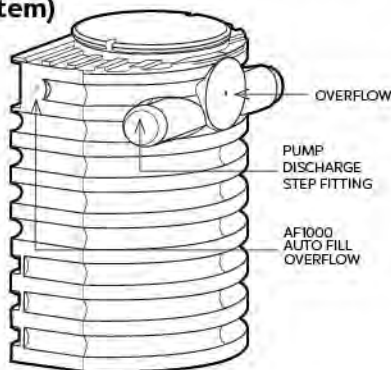


The PV1700 flat panel will sit flush against the Eco-Blox, so that water can enter the pump vault. The area where the pump vault will sit should be dug 22" deep for the PV1700. When using Eco-Blox, the pump vault will recess lower than the Eco-Blox. The area for the Eco-Blox to sit should be dug 18" deep.

Level and tamp the bottom of the excavation, then install underlayment and EPDM liner. Another layer of underlayment may be added on top of the liner for greater security before setting the Eco-Blox and Pump Vault. Backfill the space between the Eco-Blox and the excavation to lock them into place, either outside the liner with sand or clean fill, or inside the liner with gravel $\frac{3}{4}$ " or larger in diameter. Top the liner and basin with $\frac{3}{4}$ " or larger gravel or decorative stone. Smaller, more decorative gravel, landscape glass, etc. can be used to cover the top of the basin, provided a denser mesh is installed beneath the material.

Plumbing the PV1700 (Pond-free System)

The PV1700 has pump discharge step fittings molded into each side of the enclosure. The step fittings are labeled for $1\frac{1}{2}$ " or 2" PVC pipe and have cut lines molded in for each size. This allows the installer the flexibility to exit out the left or right side. Use a hand saw to remove the appropriate step fitting, using the cut lines as a reference. The flat panel on the back is for an overflow. The two drill points near the top of the left and right sides are for the installation of an AF1000 Auto Fill (See Auto Fill instructions on pg. 10).



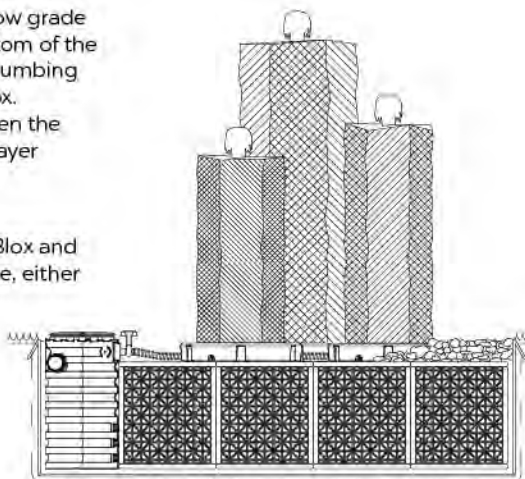
Excavating and Setting the PV1700 (Eco-Rise System)

The capacity of the basin will vary depending on the size, height and number of the decorative fountain elements. For a general rule of thumb, make the basin at least twice the width of the fountain piece(s) at the widest point. To capture the splash from taller pieces or more aggressive flows, where added storage capacity isn't desired or needed, excavate a shallow 2-3" deep bowl around the basin and extend the liner out to at least twice the height of the decorative elements in all directions. This technique will recapture as much water as possible with minimum additional excavation.

Once you have determined the approximate size of the basin, lay out the Eco-Blox and PV1700. The PV1700 should be placed away from the fountain piece where the lid can be accessed easily. Place the flat panel of the PV1700 up against the Eco-Blox so water can enter through the ports. Tailor the excavation to the shape of the Eco-Blox and PV1700 so the vertical walls of the basin will support the outside walls of the Eco-Blox, leaving a few extra inches all of the way around to make installation easier.

Dig the entire basin down to 20" below grade and carefully level and tamp the bottom of the excavation. This depth ensures the plumbing fittings exit out on top of the Eco-Blox. Install the underlayment and liner, then the Eco-Blox and PV1700. An additional layer of underlayment may be added for greater security.

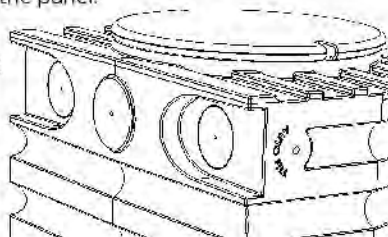
Backfill the space between the Eco-Blox and the excavation to lock them into place, either outside the liner with sand or clean fill, or inside the liner with gravel $\frac{3}{4}$ " or larger in diameter. Top the liner and basin with $\frac{3}{4}$ " or larger gravel or decorative stone.



Plumbing the PV1700 (Eco-Rise System)

The recessed panels on the front right and left are designed to accommodate up to two optional Triton 3-Way Diverters, to allow plumbing and individual valving of up to six separately controlled decorative elements. To install, drill a 2 1/4" hole with a hole saw (not included). The center point of the hole is marked on the panel.

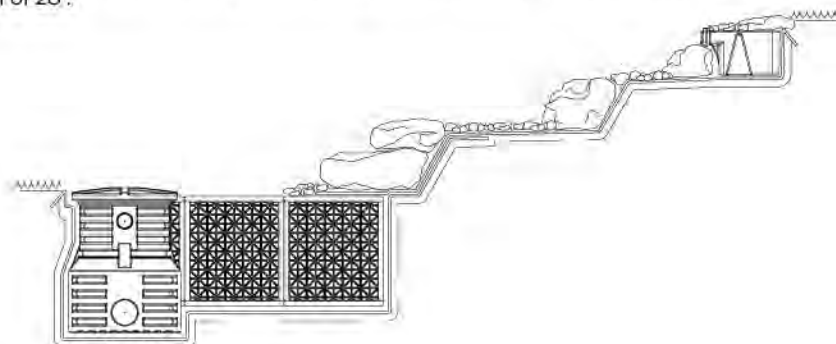
The center raised area on the front of the PV1700 can be drilled for a single discharge of up to 1 1/2" PVC pipe. Your pipe size will determine the size of the hole to drill. The flat panel on the back is designed to accommodate an overflow. The two drill points near the top of the left and right sides are for the installation of an Auto Fill (See Auto Fill instructions on pg. 10).



PV1800/PV2300 Pump Vault Installation

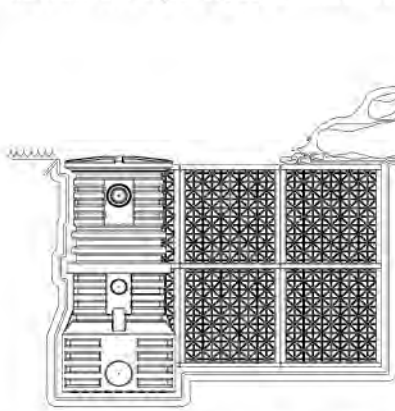
Excavating and Setting the PV1800/PV2300

Once you have determined a proper sized basin for your project, begin by deciding the placement of the vault. The vault should be placed away from the waterfall where the lid can be accessed easily. Excavate the entire area of the basin to a depth of 18". This will accommodate one layer of Eco-Blox. The area where the pump vault will sit should be dug deeper to provide a sump area for the pump to sit, ensuring the pump will remain completely submersed. If using a PV1800, dig this area to a depth of 22", and for a PV2300, a depth of 28".



For Larger Basin Volumes

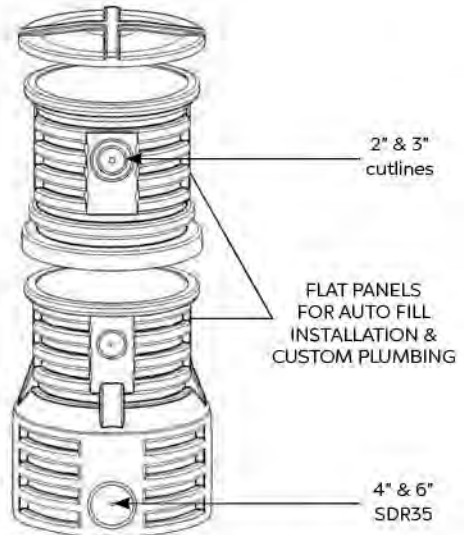
For installations where a larger basin volume or a deeper basin is required, Atlantic offers Pump Vault Extensions for both the PV1800 and PV2300. Each additional layer of Eco-Blox increases the depth of your excavation by 17.5"; use one Extension for each additional layer.



Once excavation is complete, install underlayment, pond liner, properly oriented Eco-Blox and Pump Vault. Backfill the space between the Eco-Blox/ Pump Vault and the excavation to lock them into place, either outside the liner with sand or clean fill, or inside the liner with gravel $\frac{3}{4}$ " or larger in diameter. Top the liner and basin with $\frac{3}{4}$ " or larger gravel or decorative stone.

Plumbing the PV1800/PV2300

Atlantic's Pro Series Pump Vaults do not come pre-drilled for the 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 and cut lines have been provided for 2" and 3" flex PVC. Two panels at the top have been left flat for custom plumbing applications as well as the installation of an AF1000 Auto Fill and/or overflow. Recessed areas and cut lines for 4" and 6" SDR35 have been provided on two bottom panels. Pipe extensions can be added to increase the flow of water into the vault and also increase the ability to channel debris into the vault.



SP1600/SP1900/SP2600/SP3800 FastFalls Installation

Setting the Fastfalls

Place the FastFalls on a level bed of undisturbed soil if possible, to avoid settling. If installing above existing grade, compact the area thoroughly. This critical step will ensure that the FastFalls will not settle out of level over time. Blocks or bricks set on virgin soil can also be used to raise the FastFalls while reducing the chance of settling.

Place the FastFalls right at the basin's edge to create a single dramatic fall, or pull the FastFalls back from the edge to create a stream. Leave plenty of liner around the FastFalls to make it easy to camouflage with rock later.

To ensure a leak-proof installation, test place the FastFalls in the desired location and level it from side-to-side and front-to-back. The closed design of the FastFalls ensures that water will only exit the unit over the spillway, so there is no need to tilt the FastFalls forward.

When you are satisfied with the placement of the FastFalls, remove the unit and install the liner and underlayment, being careful not to disturb the level base. Place the FastFalls on top of the liner in its original position. Check the unit for level to ensure that nothing has changed. Once the FastFalls is level and positioned correctly, place a couple of large stones on top of the FastFalls. This will ensure that the FastFalls does not move when backfilling and attaching liner.

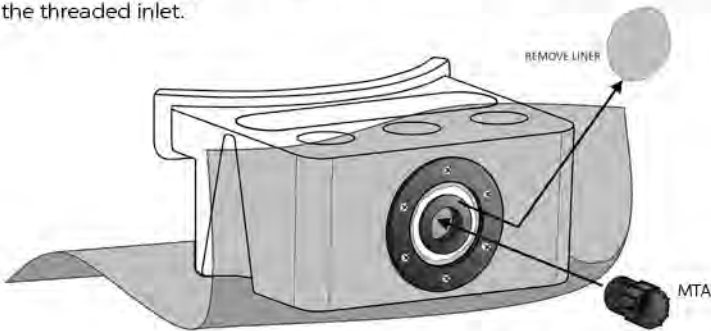
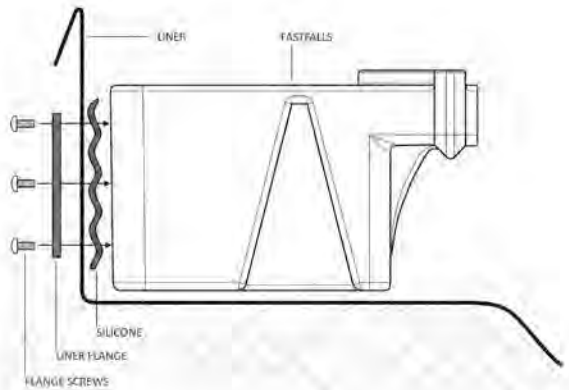


FastFalls Liner and Plumbing Attachment

Hold the liner up against the flat panel on the back of the FastFalls enclosure. Leave some excess slack in the liner below the inlet. This will help alleviate any future strain on the liner connection. Make sure the back surface of the FastFalls, and the back side of the liner is clean and free of debris. Once you are satisfied with the position of the liner, lower it down and prepare to apply the silicone sealant.

Apply Silicone Sealant in a continuous, consistent bead along the center of the threaded inserts. Once completed, return the liner to its dry-fit position.

Attach the supplied flange to the FastFalls, starting with the top screw first, working around the flange. If needed, use an awl or nail to pierce the liner before inserting the screws. Do not fully tighten any screws until all of the screws have been installed. Once completed, trim away the liner on the inside of the flange to expose the threaded inlet.

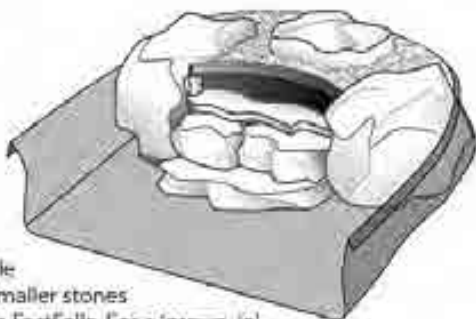


Tighten flange screws with a hand held screwdriver only. Over tightening the screws could strip out the inserts or crack the liner flange. The screws need only to be snug for the silicone to make a seal.

Apply silicone on the threads of the Male Thread Adaptor (MTA). Screw the MTA into the inlet until tight. Use PVC Glue (not included) to glue the PVC flex hose into the MTA.

Hiding the Fastfalls

Position rocks on either side of the FastFalls, inside the liner. Start working the rock in and around the front of the FastFalls, building up to the lip of the FastFalls, which will provide support for a lip rock. The Fastfalls will support the weight of gravel and rocks, stacked directly on top of the unit. Consider covering the whole unit with a single sizeable overhanging capstone, or stack individual smaller stones and gravel on top to completely conceal the FastFalls. For a 'grown-in' look, cover the FastFalls with soil and plant small evergreens and perennials right on top. The raised lip will keep the gravel or soil from washing into the water.



Accessories

Triton Check Valve

Locate the model number of the Atlantic Pump Vault 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.

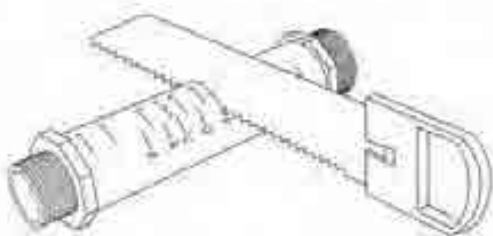
Discharge Pipe 'Perfect Cut' Reference Chart

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

	PV1700	PV1800	PV2300
TT1500	B	B	H
TT2000	B	B	H
TT3000	B	B	H
TT4000	B	B	H
TT5000	D	D	5
TT6000	D	D	5
TT7500	N/A	D	4
TT8000	N/A	D	4
SH1500	E	E	I
SH2000	E	E	I
SH3000	E	E	I
SH4000	C	C	H
SH5000	C	C	H
PAP-20	3	3	7
PAP-35	3	3	7
PAP-40	3	3	7
PAP-75	3	3	7
A-05	3	3	7
A-05L	2	2	6
A-2L	2	2	6

* The discharge pipe can be extended with the 2" PVC pipe and a coupling for use with Pump Vault Extensions.

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.

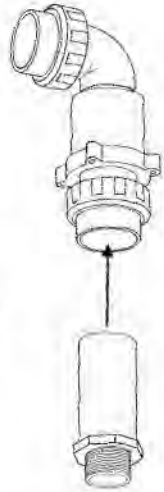


Use a small piece of sandpaper to smooth out the cut end of the discharge pipe. Clean the 2" socket fitting on the bottom of the check valve and the cut end of the discharge pipe with PVC cleaner/primer. Apply PVC glue and insert the discharge pipe into the 2" socket fitting. Hold the discharge pipe 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 Pump Vault. 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 1½" outlet fittings are supplied with the Triton Check Valve.

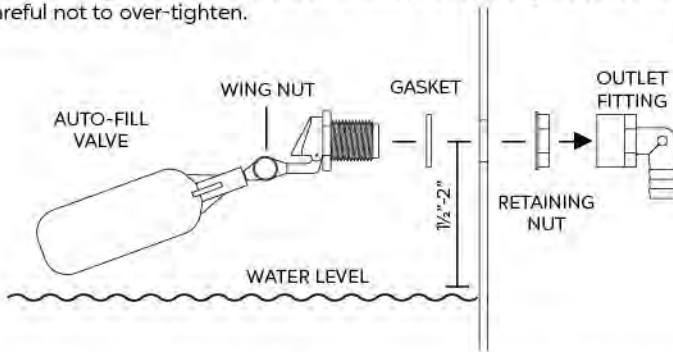
Complete installation by hand tightening the union nuts on the Triton Check Valve. **Do not over tighten.** For more detailed instructions, refer to the instruction booklet included with the check valve.



AF1000 AUTO FILL KIT

Drill points or flat areas have been provided for the proper Auto Fill location on either side of the Pump Vault. 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 or Pump Vault to place the Auto Fill so that it has proper clearance on all sides. The center point of the Auto Fill should be located approximately 1½ to 2" above the normal operating water level of the basin.

Once you have determined the location of the Auto Fill, drill a ¾" 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, ½" irrigation line, and ½" Sch 40 PVC. Wrap the ½" 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

Warranty

All Atlantic Pump Vaults and FastFalls carry a limited lifetime warranty. This warranty is extended solely to the original purchaser commencing from the date of original purchase receipt. A misused or abused product voids this warranty.

Pump Vault Accessories (AF1000 Auto Fill Kit and TR215CV Triton Check Valve) included in this manual carry a one-year warranty.

This warranty excludes labor/cost of labor for removal or installation of any product.

Warranty Claims

In case of warranty claims, the complete product should be returned to the place of purchase accompanied by original receipt.



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