

# Pond and Hybri-Pond™ Installation Guide





Thank you for purchasing a Filtrific® Filter Tank. This instruction guide is designed to assist you with both the creative and technical aspects of installing a water feature. This guide will lead you through the installation of a Filtrific® Pond. If you have any questions feel free to contact us at [support@filtrific.com](mailto:support@filtrific.com), or call (800) 906-0604.



## Table of Contents

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### INSTALLATION

Planning .....	1
Excavate Stream, Pool & Waterfall .....	3
Underlayment & Liner.....	8
Placing Rock.....	10
Excavate & Connect Tanks.....	11
Connect Intake.....	15
Connect Discharge & Waterfall Starter.....	18
Connect Overflow & Venting.....	21
Finishing Details.....	23

### TROUBLESHOOTING & SERVICEABILITY

Cleaning and Switching the Filters .....	29
Accessing Internal Components .....	30
Winterizing.....	31
Case 1: The Pump Runs out of Water in the Filter Tank During New Construction Start-Up.....	32
Case 2: The Waterfall Cycles On & Off .....	32
Case 3: The Pump Runs but Does not Pump Water.....	33
Case 4: The Pump Does not Run.....	33

# PLANNING

## 1-1a Determine the Size and Location of the Water Feature

Determine how involved you want to be with your water feature. A pond requires a continual amount of above ground standing water. The larger the pond, the more maintenance required, and the more evaporation will occur. If you enjoy all aspects of water gardening, a standard pond is a great choice. If you would prefer to be less involved in maintenance, a small, easily maintained pond with a vanishing stream might be more suited for you.

### POND OPTIONS:

- Standard Pond
- Standard Pond with additional underground water storage to replenish water lost to evaporation.
- Small, easily maintained pond with a vanishing stream (Hybri-Pond), sized for in-motion, underground water storage

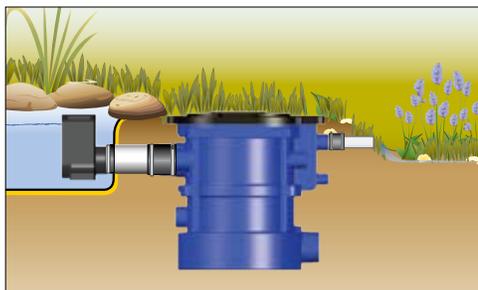


## 1-1b Select a Spot for the Filter Tank

In a Pond installation the Filter Tank can be located remotely from the end of the water feature. When using a Door Skimmer, the top of the Filter Tank should be placed even with the ground level around the water feature (at grade) when using a Door Skimmer.

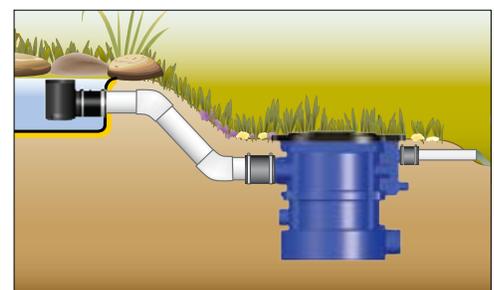
In a Hybri-Pond installation, which utilizes a Fixed Skimmer, the Filter Tank can be placed at grade, or below grade from the water feature, provided there is sufficient “in-motion water storage” for the stream as well as the pool-surface skimming-depth.

### AT GRADE:



A Door Skimmer or a Fixed Skimmer can be used when the top of the tank is installed at grade.

### BELOW GRADE:



A Fixed Skimmer only should be used since a Door Skimmer may allow the water to drop too low when turned off.

## 1-1c Choose the Intake Route

The Filter Tank can be positioned as needed to avoid an obstacle, to keep it out of the lawn, or be best aligned with additional water storage tanks.

The **intake route** is that of the pipe between the skimmer and the Filter Tank. With Filtrific you can place the Filter Tank away from the water feature enabling you to customize your intake route to best fit your landscape.

### COMMON INTAKE POSITIONING:

Intake routes for 4" IPS pipe (up to 80 GPM) and 6" IPS pipe (up to 200 GPM) can have the intake pipe run straight and level up to 50 feet (10ft less per bend). Check the skimmer being used for maximum GPM flow.

#### STRAIGHT:



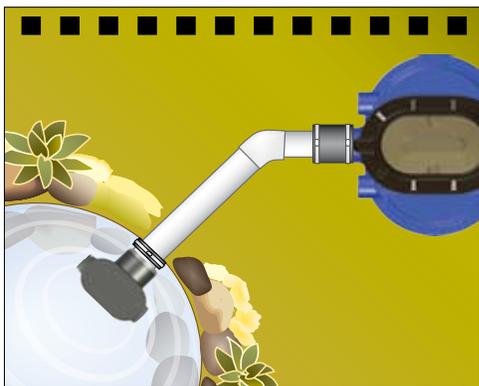
EXAMPLE: There are no obstacles. This is the most common intake route.

#### DOUBLE-TURN:



EXAMPLE: Avoid an obstacle. This route is ideal for hiding the Filter Tank behind a wall or on the other side of a shrub.

#### 45 DEGREE TURN:



EXAMPLE: Square it up with the property line.

#### 90 DEGREE TURN:

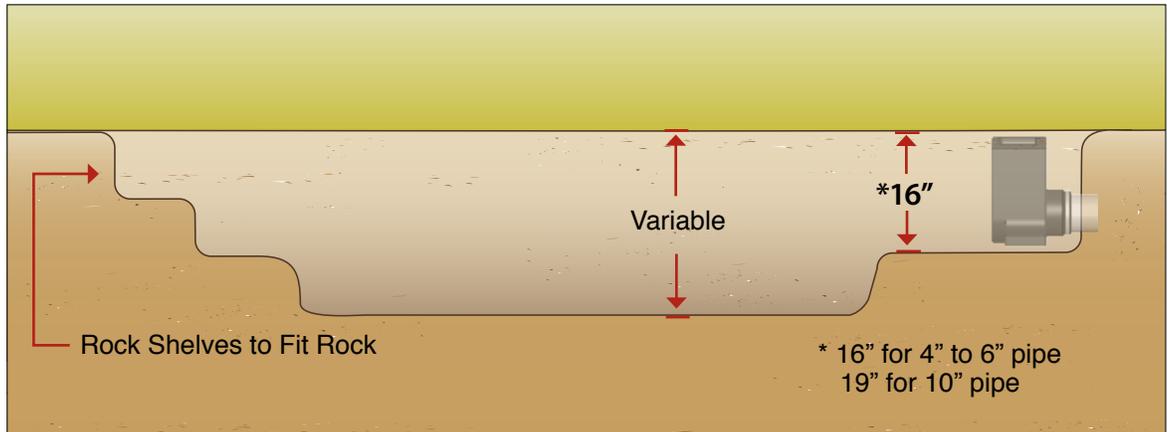


EXAMPLE: Move it to a planting area.

# EXCAVATE

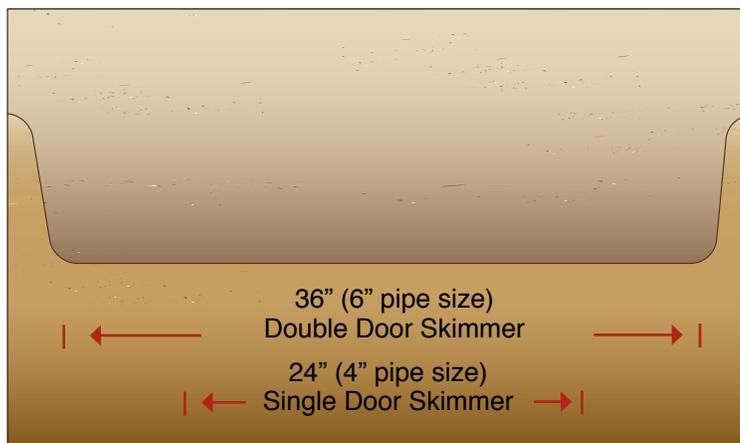
## 2-1a Excavate the Pond

If you will have fish, placing a rock shelf in front of the skimmer allows rock to be feathered away from the skimmer intake. This provides an effective fish warning and reduces the skimming depth without compromising skimming.



### TOP VIEW OF SKIMMER POCKET

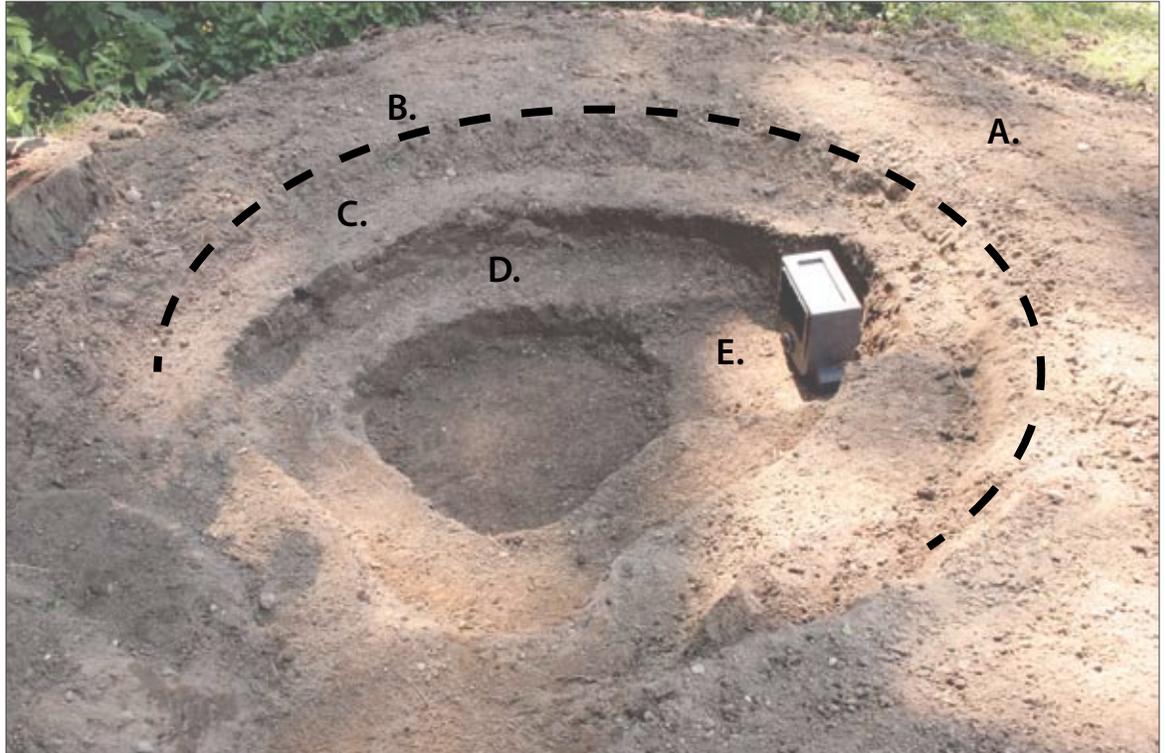
The Fixed Skimmer and Door Skimmer are interchangeable. The Door Skimmers are wider than Fixed Skimmers, If you are uncertain as which one will be best, excavate for the width of a Door Skimmer so you will be able to easily switch from one to the other.



**NOTE:** If installing a Fixed Skimmer the width of the skimmer pocket for the small 4\" skimmer is 20\". The width of the skimmer pocket for the large Fixed Skimmer is 26\".

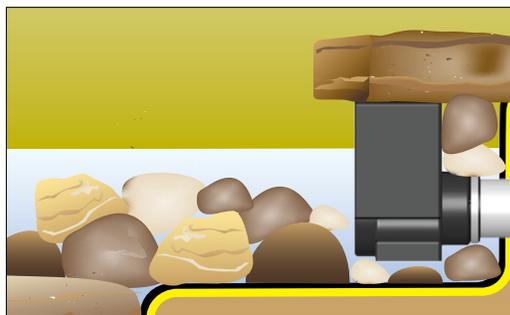
## 2-1b Excavate the Pond (cont'd)

### FINISHED GRADE



- A. Finish grade before mulch - this is the level the rim of the Filter Tank will match.
- B. Liner fold under at the top of the finished grade.
- C. Top rock shelf (this needs to be only deep enough to recess the perimeter rock placement.)
- D. Submerged rock shelf
- E. Skimmer shelf for **natural fish guard**.

### NATURAL FISH GUARD



| ← 1ft or more → |

A shallow depth of water in front of the skimmer gives fish a chance to retreat rather than suddenly being pulled into the skimmer.

# EXCAVATE

## 2-3a Excavate the Central-Stream Area

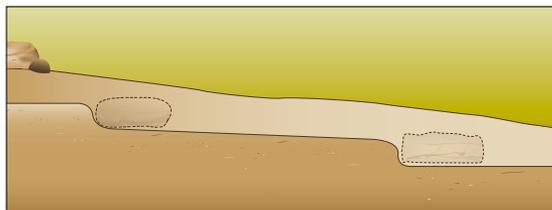
### EXCAVATING FOR A STREAM CHANNEL

A natural looking stream shows signs of erosion from years of water carving a path through the landscape. Avoid a “flying stream look” where water runs over the surface or appears elevated without any aging or character. The following instruction is a general reference to keep the water flow within the stream channel and help you build a very natural looking water feature.

While excavated depths will vary with each installation, **the excavated stream depth should never be less than 6” deep**. The excavated depth should increase where the stream drops. This will not only keep the flow of water within the stream, but also create the illusion that the water feature is a natural part of the landscape, not an addition to it.

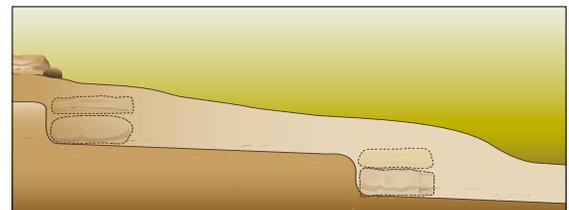


### SHALLOW DROPS



The same ground slope with a stream that more closely parallels the natural slope will have shallower drops and generate fewer splashes. This uses less rock but produces less noise. Sweeping turns often complement a gradually sloping stream by adding a lateral dimension in place of dramatic vertical drop.

### LARGE DROPS



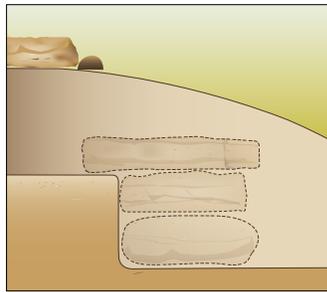
Larger drops create a dramatic look and increase the sound level. However, they require more rock and cause more splashing, which can contribute dramatically to increased evaporation.

## 2-3b Cut Waterfall Drops in the Channel

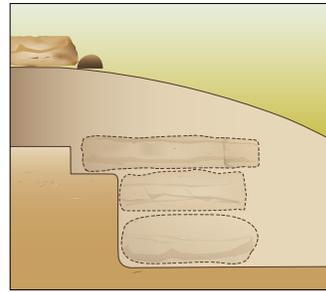
### CONSIDER THE FOLLOWING SLOPE OPTIONS WHEN EXCAVATING FOR THE WATERFALL DROPS

Depending on how the rocks will stack up – the top spill rock can rest (A) on the top of the step, (B) rest on a slightly notched shelf, or (C) for short drops, simply extend up an inch or two in front of the step.

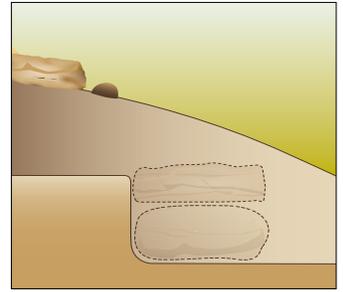
A.



B.



C.



Thick weir rocks may require a slightly recessed shelf to reduce the thickness of the weir. The back of the weir should match the gravel depth being placed in the stream channel.



Excavating a recessed shelf to accommodate the placement of thick weir rocks.

# EXCAVATE

## 2-4 Waterfall Starter Excavation and Placement

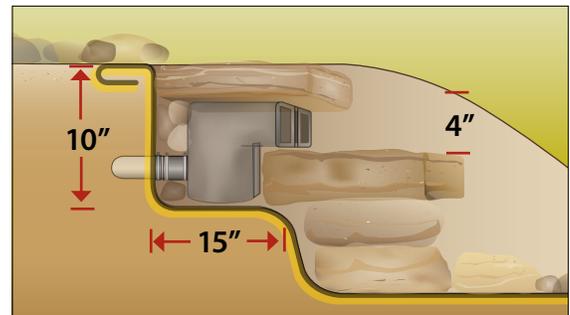
### EXCAVATE A SHELF FOR THE WATERFALL STARTER

Choose option A or B.



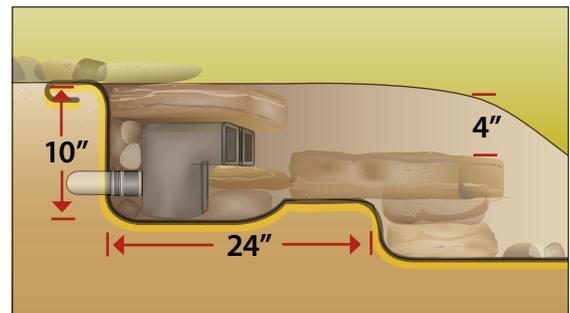
#### OPTION A.

This configuration requires the least amount of space and adds additional height.



#### OPTION B.

If the start of the waterfall will be placed directly at the viewing eye level, a slightly recessed starter disguises the hardware and provides a more natural start to the water feature.



# UNDERLAYMENT & LINER

## 3-1 Place the Underlayment

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### REMOVE SHARP DEBRIS FROM STREAM CHANNEL

Make sure the excavated channel is free of rocks, sticks and roots that could puncture the liner. Where several layers of rocks will be stacked, a slight amount of wetted sand can be added to make a smoother subsurface.



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### LAY THE FABRIC UNDERLAYMENT

Excess fabric should be used for cushioning large rock placements.



# UNDERLAYMENT & LINER

## 3-2 Place the Rubber Liner

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1. Lay the rubber liner over the fabric. Be sure that no rocks fall between the layer of underlayment and the liner, as this could damage the liner and possibly cause a leak.
2. Center the liner from top to bottom and from side to side. Don't be in a hurry to cut off the excess liner, as it can be trimmed later. Always allow a little extra liner to overhang the sides. Up to 6" of excess liner can easily be folded under as the final rocks are being placed.
3. Avoid making lateral folds that can traverse water over the side wall. Keep in mind that all water that laps or splashes against a sidewall must be able to flow back into the channel. Be very attentive to this when placing the rocks.
4. Waterfall drops bunch and gather liner from the sides, so give yourself plenty of liner to work with in these areas.



Position the liner evenly making sure there is overhang on all sides.

### **CAUTION:**

Be careful of sharp rocks in the treads of your shoes when walking on the liner. Press liner into the corners before placing the rock.

## 4-1 Place the Rocks



At waterfall drops place a section of fabric underlayment over the liner. This will cushion the liner from heavy rock placements and also allow any pooling water to slowly drain through the fabric when the system is shut off.



Place only rocks with smooth edges against the liner. If a rock has a sharp edge, reposition it so the sharp edge is away from the liner.



Fold liner under the edges or trim excess liner allowing an extra 6" to accommodate any future settling or adjustments. Try different rock placements and natural elements to achieve the look you are after.

**NOTE:** When placing rock in the pond always leave the side of the pond with the skimmer free of rock until the liner connection has been made. This will allow you to have plenty of slack in the liner to make a good connection.

# EXCAVATE & CONNECT TANKS

## 5-1 Cut Off the Applicable Ports

Cut off the ports that you plan to use, either before or after placing the Filter Tank.

**NOTE:** Filtrific provides different port size options with each Filter Tank. Make sure the Flex-Coupling included with the kit fits over the port before cutting.

### ON A FILTER TANK:



If adding a T40SP Side-Pod, cut off the "More Capacity" port.



There are multiple "Discharge" ports to choose from. The pump discharge can exit either the front or the back of the Filter Tank.

### ON A T40SP SIDE POD:



A "More Capacity" port is located on both sides of the Side-Pod. Cut off the port that will be on the same side as the Filter Tank's "More Capacity" port when slid together.

# EXCAVATE & CONNECT TANKS

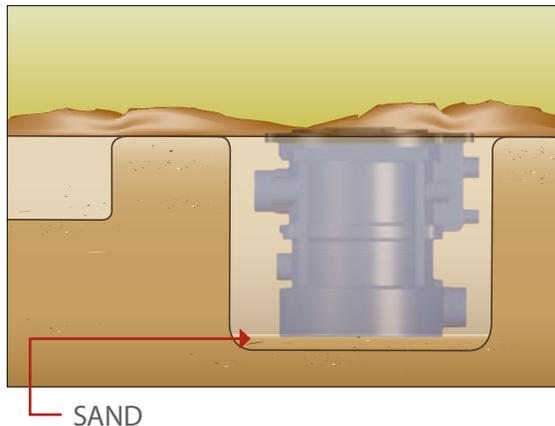
## 5-2 Excavate for the Filter Tank & Any Expansion Tanks

Now that you have established where finish grade will be around the water feature you can excavate for the Filter Tank. Dig the hole so the top rim of the Filter Tank is level with the lowest edge of the water feature.

**NOTE:** When excavating make sure to plan for the Filter Tank and any Expansion Tanks. Make sure the Filter Tank and any Expansion Tanks will fit within the excavated area with about 6" of room for connection fittings.



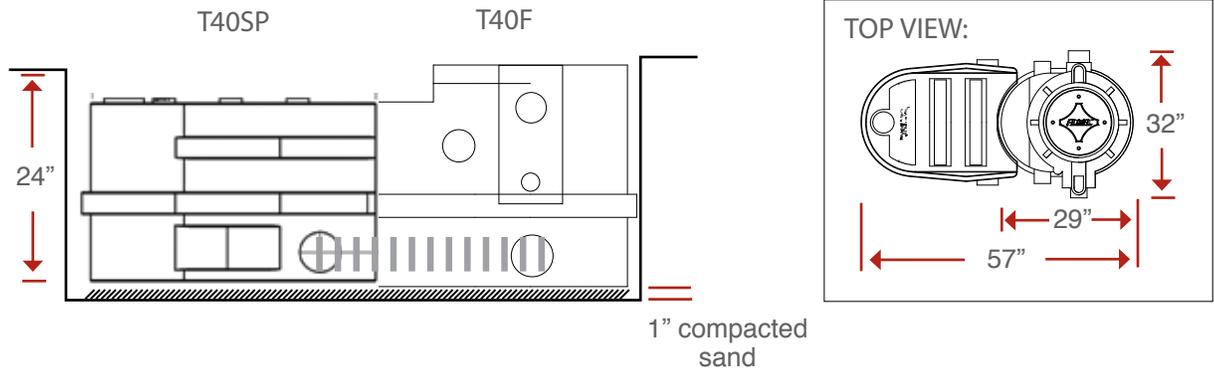
Allow room for 1" of compacted sand below the Filter Tank. This cushions the bottom of the Filter Tank and also makes leveling easier.



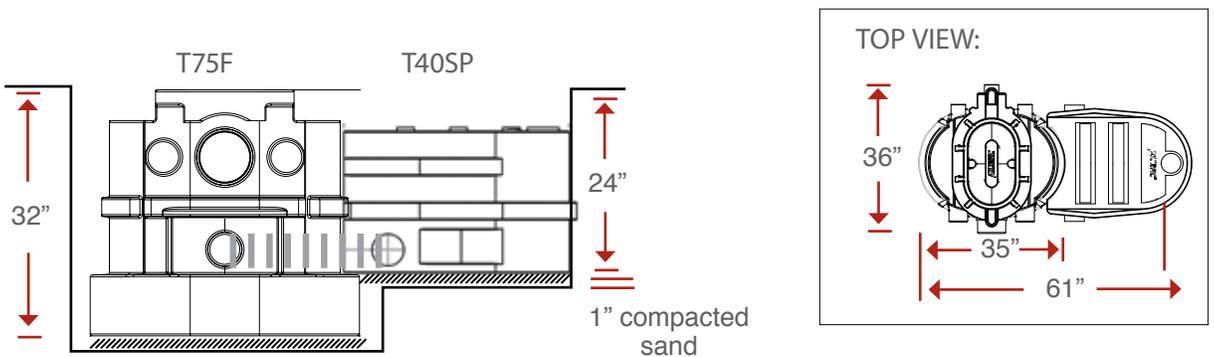
# EXCAVATE & CONNECT TANKS

## 5-3 Position the Filter Tank & Any Expansion Tanks

### T40F WITH T40SP SIDE-POD

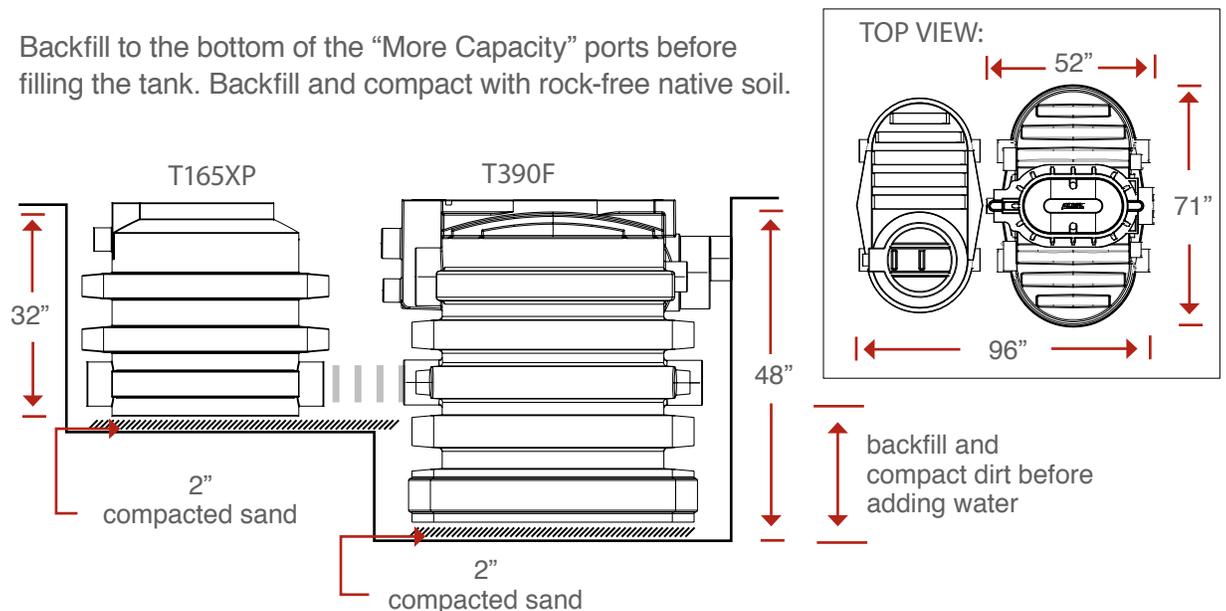


### T75F WITH T40SP SIDE-POD



### T390F WITH T165XP EXPANSION TANK

Backfill to the bottom of the "More Capacity" ports before filling the tank. Backfill and compact with rock-free native soil.



# EXCAVATE & CONNECT TANKS

## 5-4 Level the Filter Tank

Level the Filter Tank and backfill up to where the T40SP Side-Pod(s) will rest. Add a layer of compacted sand and slide the T40SP Side-Pod(s) into place.



## 5-5 Connect the Expansion Tank Manifold to Filter and Expansion Tanks

Connect the Filter Tank to any additional Expansion Tanks.

The T75F (shown right) has a T40SP Side-Pod connection port on the front of the tank. The T40F (not shown) connects to the T40SP Side-Pod using the back-lower port labeled “More Capacity.”



## 6-1 Run the Intake Pipe to the Water Feature



**NOTE:** The intake pipe should be long enough to extend inside the water feature 3" for 4" IPS pipe, and 4" for 6" IPS pipe.



### AT GRADE

**STEP 1:** Excavate the intake trench from the edge of the liner to the Filter Tank. If the Filter Tank is level with the water feature, dig the intake trench so the pipe will be level.

### BELOW GRADE

**STEP 1:** When the top of the Filter Tank is placed lower than the rim of the pond, the rim of the pool becomes your reference point. To find the penetration point of the intake pipe, measure down 8-3/4" for 4" and 6" pipe and 10-3/4" for 10" pipe. Elbow down accordingly to connect to the Filter Tank intake port. **Always use a Fixed Skimer when the Filter Tank has to be installed lower than the pond surface.**



**STEP 2:** Place the Flex-Coupling over the intake port and tighten the stainless steel clamp.



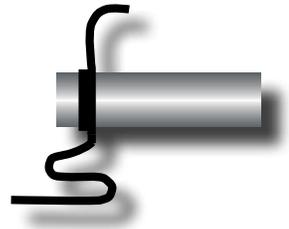
**STEP 3:** Insert the intake pipe into the coupling and tighten the stainless steel clamp.

## 6-2 Run the Intake Pipe Through the Liner and Connect to the Fixed or Door Skimmer



**STEP 1:** Using the cardboard tracing pattern, draw a circle on the liner at the center point of the pipe.

**NOTE:** Allow an expansion fold below the pipe.



**STEP 2:** With scissors, cut out the traced circle from the liner.



**STEP 3:** Stretch the liner over the pipe; this creates a tight sleeve band around the pipe.

## 6-3 Run the Intake Pipe Through the Liner and Connect to the Fixed or Door Skimmer (cont'd)



**STEP 4:** Place the flex-collar over the rubber band and tighten.



**STEP 5:** Connect the Flex-Coupling to the pipe.



**STEP 6:** Insert the skimmer outlet to the Flex-Coupling. (Fixed Skimmer shown)

**STEP 7:** Check to ensure all stainless steel clamps have been tightened. Then firmly backfill over the intake pipe so that it will stay level when it comes time to fill the system with water.

# DISCHARGE & WATERFALL STARTER

## 7-1 Connect the Pump Discharge and Flex-Pipe



Connect the discharge to the pump and lower into the Filter Tank.



Connect the pass-thru Flex-Coupling to the discharge port and slide the discharge pipe through the port. Use PVC Solvent Cement to connect the discharge to the flex-pipe.



Run the flex-pipe to the Waterfall Starter.



An optional flow control valve allows fine tuning of water flow.

# DISCHARGE & WATERFALL STARTER

## 7-2 Connect to the Waterfall Starter(s)

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At the top of the stream repeat “Connecting to Liner” (section 6-2 and 6-3, steps 1-5) using the smaller tracing disc and 3” pipe included in the Waterfall Starter Kit.



**STEP 6:** Insert the Waterfall Starter outlet to the Flex-Coupling.

## 7-3 Disguise the Waterfall Starter

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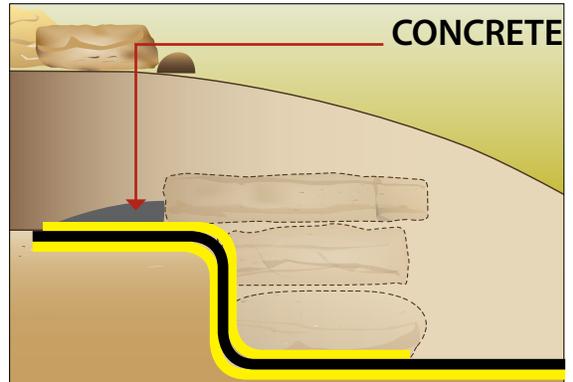
Place rock on top of the Waterfall Starter so the source of water is hidden.



# DISCHARGE & WATERFALL STARTER

## 7-4 Place the Cement Behind the Waterfall Weir Rocks

At each waterfall drop, place a strip of concrete over the extended fabric to force the water flow over the weir rocks.



Fabric allows trapped water to drain down stream when the system is shut-off.

# OVERFLOW & VENTING

## 8-1 Connect the T40SP Side-Pod Venting

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The air vent on the T40SP Side-Pod helps create a smooth transition for water flowing in and out of the tanks.



The vent should be placed in a planting area, or valve box, and should be positioned higher than the Filter Tank overflow.

## 8-2 Connect the 165XP Expansion Tank Venting

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For Standard Flow installations the lid for the T165XP includes air venting. For High-Flow installations additional venting can be added by connecting a vent pipe to the “Overflow” port.



## 8-3a Filter Tank Overflow

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The overflow allows excess rainwater to go out of the overflow rather than overflowing over the edge of the pod.



The overflow elbow slides over the pipe on the inside of the Filter Tank and raise the overflow level for pond installations.

# FINISHING DETAILS

## 8-3b DRAIN OPTIONS:

### DRAIN TO DAYLIGHT

Route the overflow pipe to drain onto an existing slope. This is suggested when you have a slope in your landscape that supports excess water run off.



### DRAIN TO STORM DRAIN

If you can't drain to above ground, tie the overflow pipe into an existing yard drain or downspout drain.



**NOTE:** If neither of the above options are possible, excess rain water can be drained into a gravel sump at a location away from the Filter Tank.

## 9-1 Fill the System with Water

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Make sure the intake pipe has been backfilled. If you are installing an optional Auto-Fill or Pump Shut-Off, these should be positioned (see section 10) before adding water. Fill the pond until water reaches the top of the overflow elbow in the Filter Tank.

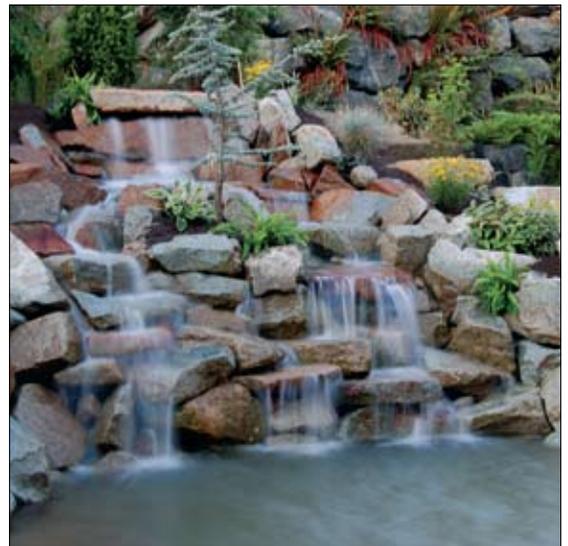


## 9-2 Turn On the Water Feature

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If you have a Hybri-Pond installation, water should return to the Filter Tank before all the water is pumped out of the tank. If you run out of water this indicates you are short on containment. If you intend to turn the system off regularly, additional water storage should be added (T40SP Side-Pod or T165XP)).

If you have a standard pond installation, the water will drop slightly then stabilize. If it continues to drop, lower the skimer, or reduce the pumping volume.



## 9-3 Adjust the Door Skimmer as Needed

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### ADJUST THE SKIMMER HEIGHT

The pond level should be at the top of the skimmer door when the system is first filled. You do not want the operating water level flowing over the top of the liner. The operating water level should be no closer than 2" from the top of the liner. If not, lower the skimmer.

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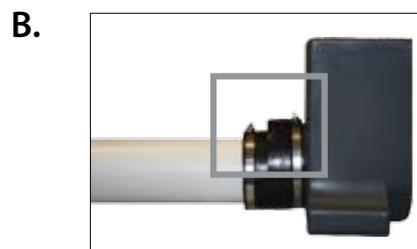
#### TO LOWER THE SKIMMER

The eccentric coupling can be rotated to lower the skimmer (A).



#### TO RAISE THE SKIMMER

To raise the skimming depth, simply rotate the Eccentric Coupling (B).



## 9-3 Adjust the Fixed Skimmer as Needed

### ADJUST THE SKIMMER HEIGHT

Trim or lower the skimmer as needed to accommodate the pumping volume. You do not want the operating water level flowing over the top of the liner. The operating water level should be no closer than 2" from the top of the liner.

### TO LOWER THE SKIMMER

The Fixed Skimmer is designed to be lowered in two ways. The Eccentric Coupling can be rotated to lower the operating water level (A), and for high flows the Fixed Skimmer opening can also be cut down (B). Either or both of these adjustments will lower the operating level of the finishing pool.

A.



B.



### TO RAISE THE SKIMMER

To raise the skimming depth, simply rotate the Eccentric Coupling.



## 9-4 Final Tasks

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Finish placing rock around the skimmer. The skimmer can be hidden with natural elements or finished with a Stainless Steel Grate (use the riser kit if there will be leaves falling into the stream).

### **THINGS TO CHECK:**

- Make sure all stainless steel clamps have been tightened before backfilling.
- Make sure all water flowing down the stream is contained within the liner.
- Make sure there is at least 2" between the top of the liner and the operating level of the pond. If not, raise the liner accordingly, shorten the height of the skimmer, or reduce the pumping volume.
- Make sure that the system can be turned off and then turned back on without having to add water.
- Make sure that the terrain around the Filter Tank is graded so surface water does not collect around it.

# 10-1 Install the Auto-fill, Pump Shut-off, and Accessories

For a Pond installation not requiring underground water storage, position the auto-fill and pump as shown below.



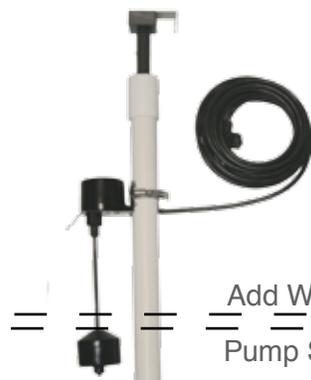
The pump switch should turn the pump off before the pump draws air.



The auto-fill in this position keeps the tank full.

For a pond installation utilizing underground water storage, position the auto-fill and pump shut-off as shown below.

If you are installing an Auto-Fill device and a Pump Shut-off, make sure the Auto-Fill is positioned above the Pump Shut-off level so water can be added before the pump switch turns the pump off. If the Auto-Fill is positioned too low it will never have a chance to add water. For installation instructions refer to instructions included in each kit.



The Auto-Fill in this position allows the Filter Tank to pump down and only adds water when the pump needs it.



== Add Water Level  
== Pump Shut-off Level  
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## Serviceability & Troubleshooting

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### SERVICABILITY

Cleaning and Switching the Filters .....	29
Accessing Internal Components .....	30
Winterizing.....	31

### TROUBLESHOOTING

Case 1: The Pump Runs out of Water in the Filter Tank During New Construction Start-Up.....	32
Case 2: The Waterfall Cycles On & Off .....	32
Case 3: The Pump Runs but Does not Pump Water.....	33
Case 4: The Pump Does not Run.....	33

# CLEANING & SWITCHING THE FILTERS

## 1-1 Remove the Filters and Clean

To remove the Filter Baskets, open the filter access cap, and lift the basket straight out.



Filter Screens can be further cleaned with a hose



## 1-2 Removing or Changing the Filter Screens (optional)

Screens are easily attached and removed for additional cleaning, or to change to a different mesh size.



# ACCESSING INTERNAL COMPONENTS

## 2-1 Remove the Filter Carriage

Unthread the Filter Carriage bolt and remove the Filter Carriage.



## 2-2 Optional Service Plug

An optional Service Plug prevents water from flowing into the pump chamber during equipment adjustments or repairs.



# COLD CLIMATE WINTERIZING

## 3-1 Winterizing

In climates with deep frost levels, use the ICE-8100 Submersible De-Icer to protect against freeze damage. A built-in thermostat lets the De-Icer run only as needed.

### SUBMERSIBLE DE-ICER

#### Features:

- Thermostatically Controlled
- 1 unit heats approx. 300 gallons
- Power requirement: 120 Volts, 300 Watts
- 15ft cord

Model: ICE-8100



# TROUBLESHOOTING

## 1-1 Case 1: The Pump Runs out of Water During New Construction Start-Up

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### CAUSE:

- A. The skimmer is set too high causing water to run over the top of the liner.
- B. The water level in the pond is too low or the skimmer is too small, or too high for the volume of water being pumped.
- C. In a Hybri-Pond installation there is not enough underground water storage for the size of the water feature.

### SOLUTION:

- A. Lower the skimmer or reduce the pumping volume by adjusting the pump flow.
- B. Lower the skimmer, increase the size of the skimmer to reduce the skimming depth buildup over the surface area of the pond, or add additional underground water storage or reduce the pumping volume.

## 1-2 Case 2: The Waterfall Cycles On & Off

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### CAUSE:

- A. The optional pump-float switch inside the Filter Tank is signaling that the water is too low. This is caused by evaporation, water escaping through or over the liner, or Filter Baskets which are full of debris and are restricting water flow.

### SOLUTION:

- A. Check the Filter Basket(s). Consider a larger mesh filter screen to reduce cleaning frequency.
- B. Add water.
- C. Check the edges of the liner for any settling that might be causing a loss of water.
- D. Reduce evaporation loss by turning the system off when not necessary.

# TROUBLESHOOTING

## 1-3 Case 3: The Pump Runs but Does not Pump Water

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### CAUSE:

- A. The Filter Baskets are full of debris and restricting water flow.
- B. The water level in the Filter Tank dropped too low causing air to be drawn into the pump resulting in an air-lock within the pump.
- C. Small pumps used in conjunction with large mesh Filter Baskets can sometimes become plugged with debris.

### SOLUTION:

- A. Clean the Filter Baskets.
- B. Turn the pump off and wait a few seconds, then turn it on again. Try this a few times and if this doesn't solve the problem, remove the discharge Flex-Coupling above the pump to release the air, reconnect, and restart the pump.
- C. Turn off the pump, remove the pump, and clean the pump of debris.

## 1-4 Case 4: The Pump Does not Run

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### CAUSE:

- A. There may not be power to the pump.
- B. The optional Pump Shut-off Switch may have become stuck in the "off" position.

### SOLUTION:

- A. Make sure there is power to the pump.
- B. If your system has an optional Pump Shut-off Switch, unplug the pump switch from the outlet and plug the pump directly into the outlet. If the pump now runs... check the float switch for obstructions that may be keeping it in the down or "off" position.

## Warranty Info

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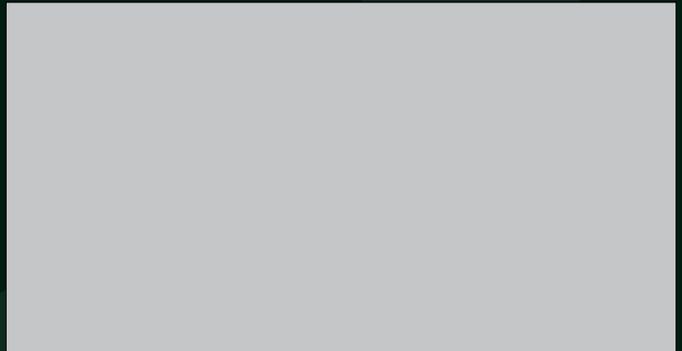
### **LIMITED TRADE WARRANTY**

The Filtrific® Co. LLC (Filtrific) offers a 5 year warranty on all polyethylene Filter and Expansion Tank products. All other products and accessory components are warranted to be free of defects in material and workmanship for a period of two (2) years from the original date of purchase. This warranty extends only to the original installer of the Filtrific® product. Filtrific® will repair or replace any properly handled and installed product which fails under normal operating conditions within the warranty period, providing an RGA is issued by Filtrific, and the material is returned to the factory shipping prepaid. This warranty does not extend to labor or replacement charges, nor does it apply to any equipment of another manufacturer used in conjunction with Filtrific® equipment. Filtrific® shall not be liable for indirect, incidental, or consequential damages.



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