



# Patio Ponds Filter Systems

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*To Last a Lifetime*

The Pond Filtration **EXPERTS!**

## Patio Ponds Complete Biological System Instruction Sheet

Thank you for purchasing a **Patio Ponds Complete Biological System**. This sheet will provide you with detailed information on the proper installation, maintenance and capabilities of your filter.

### Capabilities

The **Patio Ponds Complete Biological System** is a external, pump-fed filter system designed to filter koi ponds up to 6,000 gallons. Its unique three-chambered design allows for removal of solids before the biological areas of the filter.

### Parts Checklist

Before you assemble your **Patio Ponds Complete Biological System** please take the time to familiarize yourself with the parts and components of the filter.

Your **Patio Ponds Complete Biological System** should contain the following:

- 1 Brush chamber with lid**
  - 1 - 1½" Spraybar Assembly
  - 1 - 2" Drain Standpipe Assembly (2" Male Adapter and piece of 2" PVC)
  - 3 Stainless Steel Rods
  - 30 **Black Magic Brushes**
- 2 Biological chambers with lids**
  - 4 - 3" Standpipe Assemblies (3" Tee, 3" pipe and 3" Male Adapter)
  - 2 Media Support Grates
  - 4 Pieces of rectangular 2" Filter Matting
  - 2 - 2" Male Adapters (with short length of 2" PVC)
  - 2 - 2" Gate Valves
- 8 - 3" MIPT x SPIG Fittings
- 4 - 3" Fernco Couplings

### Assembly

Assembly of the **Patio Ponds Complete Biological System** is simple, requiring few tools, if any. However, great attention must be paid to the proper set-up and siting of your filter. You will need the following items from your local hardware store before you begin assembly:

- Teflon Thread Tape
- PVC cement
- Assorted lengths of 3", 2" and 1½" PVC pipe (length needed varies with application)
- 2 - 3" Male Adapters
- PVC elbows and connections (type and number varies with application)
- 2 x 4's and 4" deck screws (for stand construction)

Your **Patio Ponds Complete Biological System** must be placed on a hard, level surface with the outputs above the water level of the pond to allow the water to return via gravity. (see **Diagram D** for appropriate placements) You may either place the filters above ground on a wood stand or in-ground on using a wood stand (see **Diagram C** for stand dimensions). However, if you choose to install the filters in-ground you will need to take steps to allow yourself access to the drain valves for cleaning. This may be accomplished by having the drain valves located near the end of the drain lines, or by sinking a piece of 4-6" PVC pipe in-ground allowing you access to the drains.



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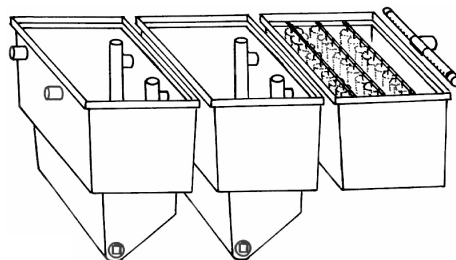
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## Patio Ponds Complete Biological System Instruction Sheet (continued)

After you have properly sited and prepared an area for your **Patio Ponds Complete Biological System**, you are ready to begin assembly and installation of your filter.

1. Construct a **Wood Stand** to serve as a base for your filters. Use pressure-treated 2x4's and 4" deck screws for best results. See **Diagram C** for correct dimensions. Your dimensions may vary due to available materials and placement.
2. Place the three filter chambers on your **Wood Stand** at your pre-selected site. See **Diagram A** for chamber placement.
3. Wrap the threads of the **3" MIPT x SPIG** (#1, diagram A) fittings 3-4 times with Teflon Thread Tape. Install on each chamber as in **Diagram A**.
4. Loosen the clamps on the **3" Fernco Couplings** (#2, diagram A) with a screwdriver. Slip the rubber couplings over the **3" MIPT X SPIG Fittings** on each chamber then tighten the clamps with a screwdriver to ensure a water-tight fit.
5. Attach the **1½" Spraybar Assembly** (#6, diagram A) to the feed from your pump. The spraybar should be secured and placed higher than the approximate water level to allow the spraybar to aerate the water. You may need to cut a notch in the filter lid to allow room for the spraybar.
6. Thread the **2" Drain Standpipe Assembly** (#5, diagram A) into the **2" Drain** at the bottom of the brush chamber. Wrap the threads of the **2" Male Adapter** (#4, diagram A) 3-4 times with Teflon Thread Tape. You may wish to attach the 2" drain to a drain line to transport the waste water to an area of your choosing.
7. Place the **Stainless Steel Rods** (#8, diagram A) in the brush chamber. Using the eyehooks on the brushes, hang **10 Black Magic Brushes** (#7, diagram A) on each rod.
8. At the bottom of each biological chamber, place one **Media Support Grate** (#11, diagram A). Cover the grate with 2 pieces of the **Filter Matting**.
9. Install the **3" Standpipe Assemblies** (#3, diagram A) into each biological chamber as in **Diagram A**. You will need to cut two holes in the filter matting to allow the **3" standpipe assemblies** to pass through them. Trace around the standpipe and carefully cut the holes with a utility knife.
10. Thread the **2" Male Adapters** (#4, diagram B) into the **2" Drains** (#9, diagram A) on each biological chamber, wrap the threads 3-4 times with Teflon Thread Tape. Using a short piece of 2" PVC glue the **2" Gate Valves** to the male adapters. See **Diagram B** for addition detail. You may wish to plumb the drains to a 2" PVC line to transport the waste water to an area of your choosing.
11. Using 3" Male Adapters and 3" PVC, construct an appropriate run of pipe to return the water to your pond. See **Diagram D** for correct construction. Be sure to wrap the threads of the 3" Male Adapters with Teflon Thread Tape 3-4 times.





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### Maintenance

Maintaining your **Patio Ponds Complete Biological System** is very easy. Every 1-2 weeks flush the brush chamber as follows:

1. Shut off pump
2. Shake brushes to loosen debris
3. Remove the 2" Standpipe assembly from the brush chamber
4. Allow debris to drain
5. Re-install the 2" Standpipe assembly in the brush chamber
6. Turn on pump

If the brush chamber is properly maintained, the Bio Chambers should not need maintenance. However, if necessary flush the filter as follows:

1. Shut off pump
2. Shake filter matting to loosen debris
3. Open 2" gate valve on drain of bio chamber until empty
4. Close 2" gate valve
5. Turn on pump

Be careful to use POND WATER ONLY when cleaning the biological portion of your filter. Failure to do so will harm the colony of beneficial bacteria present, nullifying the effectiveness of your filter and sacrificing your water clarity.

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