

The logo features the brand name 'Tetra Pond' in a white serif font, with a circular icon containing a stylized leaf or drop shape between the two words. The text is set against a green background that forms a banner shape.

Tetra Pond

Pond Equipment

Approved by

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For more information: www.tetra.net



To create and maintain a balanced pond, it is essential to have the right equipment. This is because ponds contain a higher concentration of fish than natural rivers and lakes, and therefore need a helping hand to keep the water clean, clear, and healthy.

This brochure introduces you to the most important pieces of equipment, including those in the TetraPond range. Don't worry if you're not certain what you need - your local water gardening centre or aquatics outlet will help you to choose equipment that is suitable for your particular pond.

For more information on ponds and TetraPond equipment, visit **www.tetra.net**



Pond pumps

The pump is essential if there is to be any water movement in the pond, to run waterfalls, fountains, filter systems etc. In essence it can be thought of as the 'heart' of the pond, and as such is the most important piece of equipment. There are many different types and sizes of pump, and so it is important to think about which one will suit you best.

TetraPond pumps are designed for a wide range of situations, and are clearly packaged to allow you to select the right model.

Types of pump

Different types of pump are designed for different applications. It is important to be aware of the main types, and to discuss your requirements with your aquatics outlet or water gardening centre.

- **Fountain pumps**, such as the **TetraPond FP**,

are designed to deliver clean water to fountain attachments. They therefore need good pre-filtration to sieve out any dirt, which requires occasional rinsing according to how clean the pond is. Larger fountain pumps can also be used to run small watercourses or filter systems.

- **Debris-handling pumps**, such as the **TetraPond CFP**, are built to handle large quantities of solid waste without clogging. This dramatically reduces maintenance, and ensures a more consistent flow of water. This makes them ideal for running larger water courses and filter systems. The only drawback is that they are not suitable for operating fountains.





Selecting the right size pump

There are many factors that influence how powerful the pump needs to be. Your aquatics outlet will give you expert guidance, however it will help them if you've given some thought to the following:

Fountains

Not only do they look attractive, fountains also help to aerate the water. When selecting a pump, you must bear in mind how large a fountain you want. Ideally, the maximum height of the fountain should be half the width of the pond, in order to prevent water being blown out of it. A larger fountain will require a more powerful pump.

Waterfalls

Like fountains, waterfalls look great and are extremely good at aerating the water. They do, however, require a reasonable amount of water to make them look effective. As a rough rule of thumb, for every cm width of water you need approximately 90 – 180

litres per hour (50 – 100 gallons per hour for every inch width), depending on how bold a flow you require.

For instance, if you wanted to have a waterfall that was 30cm (12in) wide, you would need a pump that could produce 2700 lph (600 gph) for a gentle trickle of water, or 5450 lph (1200 gph) for a strong flow.

System head

This is the height to which water is being moved, and relates to the distance between the surface of the pond and the maximum height to which the water is being pumped. The greater the head, the more powerful

Checklist for sizing a pump

- Fountain height
- Waterfall width & strength
- System head
- Recommended flow for filter/ UVC

a pump you will need. This is because the flow rate produced by a particular pump falls the higher it has to push water.

Filter and UV clarifier

It is also important to match pump flow rates to any other equipment. Putting too much or too little water through a filter system, for example can affect its performance. Therefore, you need to check the recommended flow rates on equipment, before purchasing it.

By considering all of these requirements, you can tell your aquatics outlet what you want to achieve with your pump. If in doubt, always opt for a bigger model than you need, to allow a margin of error. This is because you can easily restrict or divert excess flow, but you can't increase it.

Care of your pump

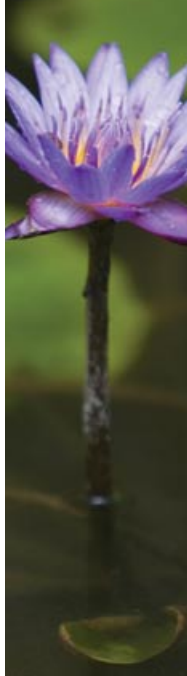
Modern pond pumps, such as those in the **TetraPond** range, are designed to run constantly all year round. However, to keep them working properly, they will require a small amount of care.

The type of pump you have will determine what you have to do to look after it, and so it is important to read the instructions carefully.

- Pre-filters and strainer baskets may need occasional rinsing when flow rates fall
- Moving parts may need cleaning, especially in hard water
- In winter, if there is a danger of water freezing, remove it and store it dry
- When operating during the winter, ideally raise the pump off the base of the pond to reduce water movement.

Read the instructions for more advice on your particular pump.

Use the largest diameter pipework that your pump will take, to reduce flow restrictions.

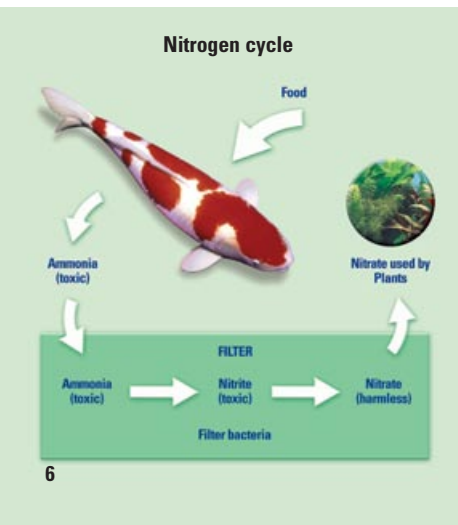


Pond filters

The filter replicates some of the natural cleaning processes that occur in nature. It has two main functions:

1 Mechanical filtration is the physical removal of suspended solid waste from the water, as it passes through special **mechanical filter media**, such as brushes and sponges. By trapping these suspended particles, the water is kept clear, and the amount of waste that accumulates on the base of the pond is reduced.

2 Biological filtration is the removal of dangerous dissolved wastes from the water by naturally-occurring bacteria. These special **nitrifying** bacteria convert ammonia into nitrite, and then nitrite into nitrate. This process is called nitrification, and it is critical to a healthy pond, because both ammonia and nitrite are highly toxic to fish and other pond inhabitants. Nitrification occurs on special **biological media**, which usually consists of plastic rings or porous rocks.



If a pond is not adequately filtered, water quality will deteriorate causing harm to the fish. Although pond plants help to improve water quality, in most ponds they are unable to deal with all of the waste that the fish produce. A correctly sized filter is therefore essential.

Types of filter

Two types of pond filter are available. Traditional **gravity-fed** filters, such as the **TetraPond PFC**, must be positioned at the highest point in the system. Water is pumped into them, and then allowed to run through the media and back out into the pond or down a watercourse. They can hold lots of filter media, yet consideration must be given to how they will be concealed from view.

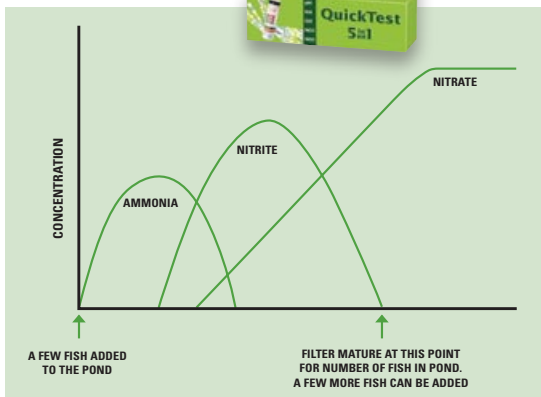
Pressure filters, such as the **TetraPond PFX**, can be positioned more freely, and even partially buried. This is because they are pressurised, which means water can be pumped through them, and then on up to a watercourse for example.



Maturing a new filter

New filters are devoid of nitrifying bacteria, and therefore cannot convert ammonia into harmless nitrate. The process of establishing a healthy population of bacteria is called filter **maturation**, and it may take a number of weeks. During this time it is important not to add too many fish to the pond, to avoid dangerous levels of ammonia and nitrite. Getting this process wrong can lead to water quality problems, sometimes referred to as '**New Pond Syndrome**'.

In order to avoid dangerous peaks in ammonia and nitrite levels, the pond should be stocked slowly, allowing the filter to 'catch up' with each new addition of fish. As a general rule, a few fish should be added every one to two weeks. In between each addition, test the water for ammonia and nitrite every 2-3 days using **TetraPond test kits**. Once levels of ammonia and nitrite fall to zero, you know it's safe to add more fish.



If levels become dangerous, the best way to decrease them is with a partial water change, using tap water conditioned with **TetraPond AquaSafe**. Feeding levels should also be reduced until levels return to normal.

For more information on stocking a new pond, see our '**Creating a Garden Pond**' brochure.

Caring for your filter

Depending on how much waste is being produced in your pond, you will from time to time need to clean the media inside your filter. This may need to be done manually, or some filters, such as those in the **TetraPond** range, have automatic cleaning mechanisms to reduce maintenance.

The mechanical media can be removed and sprayed clean with the hosepipe, taking care not to get any water onto the biological media.

Under no circumstances should you clean the biological media using water from the hose.

The low temperature and chlorine content will kill off the nitrifying bacteria, leading to severe water quality problems. Instead, it should be rinsed gently in a bucket of pond water.



The filter can be left running all year, except when there is a chance that it will freeze. Turning the filter off for longer than just a few hours will result in a loss of all the beneficial bacteria, leading to water quality problems. Filters turned off during very cold weather should be restarted as soon as possible.



Ultraviolet Clarifiers

Ultraviolet clarifiers (UVCs) are designed to prevent green water forming in the pond. They work by killing the algae responsible for green water, allowing it to clump together so that it can be sieved out by the filter. Once in operation, they will help to keep the pond crystal clear, so that you can observe your fish easily and enjoy your pond more. They also prevent imbalances in water quality that can be caused by green water (see the **'Beating Green Water and Blanketweed'** leaflet).

TetraPond ultraviolet clarifiers have been designed to efficiently remove green water

from the pond, and stop it reoccurring. Although not as essential as a pump and filter, most pond owners benefit greatly from installing UVCs. Indeed, **TetraPond** filters are available with in-built UVCs to keep the water even clearer.

Sizing your UVC carefully is very important, as its effectiveness depends on the amount of time the ultraviolet light is in contact with the water.





Flow rates that are significantly above or below recommended values will reduce the efficiency of the unit. **TetraPond UVCs** are clearly labelled, allowing them to be easily matched to your pump and filter system. If you're not sure what size you need, ask your aquatics outlet for advice.

Caring for your UVC

In order to keep your UVC working effectively, the bulb should be replaced once a year. The best time to do this is in early spring/late winter, before the algae starts to grow again after



the winter. The quartz sleeve should also be kept clean using a soft cloth, as a build up of limescale will cut down the amount of light that hits the water. Refer to the manufacturer's instructions for details on cleaning.





TetraPond Pumps

TetraPond pumps have been designed for reliability, easy maintenance, and high performance, and all come with a 3 year guarantee.

TetraPond FP fountain pumps are small, powerful units designed for running fountains and small watercourses. A large pre-filter basket provides a high surface area for reduced blocking and less maintenance.

TetraPond CFP debris-handling pumps are designed to handle solids up to 10mm in size, thereby virtually eliminating blocking and maintenance. They are exceptionally robust and reliable and perfect for providing a continuous flow of water to waterfalls and filter systems.

For added peace of mind, all **TetraPond** pumps come with a safety device that prevents electric current leaking into the water from any equipment in the pond






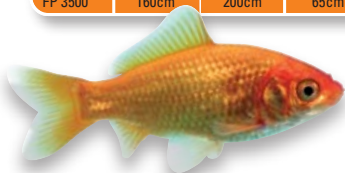
CPF filter pumps: Selection Table

	Max. pumping height	Max. water flow
CPF 3500	2.7m	3400l/h
CPF 5500	2.5m	5500l/h
CPF 8500	3.2m	8100l/h
CPF 11500	3.3m	11500l/h



FP fountain pumps: Selection Table

Model No.							Max. water flow
	Ø Diameter	Height	Ø Diameter	Height	Ø Diameter	Height	
FP 1000	70cm	75cm	35cm	-	40cm	20cm	1000l/h
FP 1500	100cm	110cm	45cm	-	70cm	35cm	1500l/h
FP 2500	150cm	160cm	60cm	-	140cm	70cm	2500l/h
FP 3500	160cm	200cm	65cm	-	200cm	100cm	3400l/h



TetraPond Filters

TetraPond filters are designed to keep pond water clean, clear and healthy, whilst being easy to maintain and operate.

TetraPond PFX pressure filters are easy to conceal or bury, as they can be placed anywhere between the pond and waterfall. They contain separate biological and mechanical filter media for more efficient filtration and have in-built ultraviolet clarifiers for even clearer water. A one-touch back-flushing facility makes maintenance easy, extending the amount of time between cleaning.



units, designed to deliver exceptional water quality. With separate biological and mechanical media, and in-built ultraviolet clarifier, they keep pond water crystal clear and healthy. Special filter-cleaning and back-flush mechanisms also make maintenance easy, reducing the need to physically remove and clean the filter media.



TetraPond PFC flow-through filters are modern gravity-fed

Filter: Selection Table

	Maximum pond size (up to 50cm of fish per 1,000 litres)	Maximum flow rate	TetraPond pump needed to deliver this flow at 0.5m system head	TetraPond pump needed to deliver this flow at 1m system head
PFC-UV 8000	4,000 litres (900 gallons)	3,000 lph (650 gph)	CFP 3500	CFP 5500
PFC-UV 16000	8,000 litres (1,750 gallons)	5,000 lph (1,100 gph)	CFP 8500	CFP 8500
PFX-UV 5000	2,500 litres (550 gallons)	4,000 lph (880 gph)	CFP 5500	CFP 8500
PFX-UV 8000	4,000 litres (880 gallons)	6,000 lph (1,320 gph)	CFP 8500	CFP 11500
PFX-UV 12000	6,000 litres (1,320 gallons)	7,000 lph (1,550 gph)	CFP 8500	CFP 11500

* A lower flow rate and smaller pump can be used for smaller ponds

TetraPond UVCs

TetraPond UVCs use single-ended, highly efficient Philips bulbs that allow the units to be more compact. Available in a range of sizes for all ponds, they can be fitted to virtually any system for crystal clear water.



UVC: Selection Table

	Maximum pond size (up to 50cm of fish per 1,000 litres)	Maximum flow rate	TetraPond pump needed to deliver this flow at 0.5m system head	TetraPond pump needed to deliver this flow at 1m system head
UVC 8000	4,000 litres (900 gallons)	2,000 lph (450 gph)	CFP 3500	CFP 3500
UVC 12000	6,000 litres (1,300 gallons)	3,000 lph (650 gph)	CFP 3500	CFP 3500
UVC 20000	10,000 litres (2,200 gallons)	5,000 lph (1,150 gph)	CFP 5500	CFP 5500
UVC 40000	20,000 litres (4,400 gallons)	8,000 lph (1,750 gph)	CFP 8500	CFP 8500

*Ideally, choose the UVC that has a maximum flow rate greater than the flow produced by your chosen pump.

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