



Comprehensive Product Catalog

- Power House Family of Products ■ p2
- About Power House ■ p4
- pH Control Capability ■ p6
- Microbial-Coexistence Control Structure ■ p8
- Irregular Raschig Ring Form ■ p10
- Waterweed/Small Koi/Small Characin/Shrimp/etc. ■ p12
- Discus/Arowana/Corydoras/Pleco/Guppy/Platyfish/etc. ■ p14
- African Cichlid/Saltwater Fish/etc. ■ p16
- Power House Basic ■ p18
- Power House MonoBall ■ p20
- Power House Custom ■ p22
- MicroHouse Series: Kit/Pack/L Pack ■ p24
- Power House System Filter ■ p28
- Power House System Filter 1A ■ p30
- Power House System Filter 2A ■ p32
- Power House Small Filter ■ p34





Power House products offer high performance, high quality and high durability. Their characteristic – convenience of use.

Power House

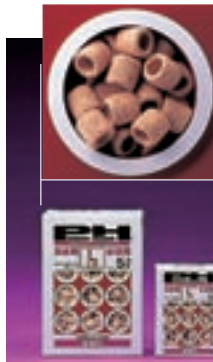
- High-performance filtering media long-loved by many professionals and enthusiasts



Power House Soft Type

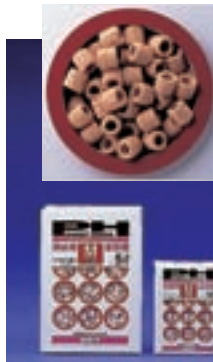
Power House Soft Type M Size 1 ℓ (0.9 qt.)

- Soft Type L Size Surface area for microbial settlement: 800 m²/ℓ (9,568 sq. ft./qt.)



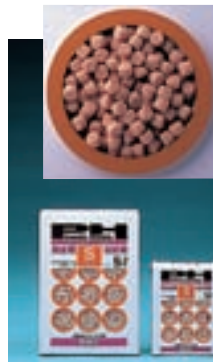
◆5 ℓ (4.5 qt.) ◆1 ℓ (0.9 qt.)

- Soft Type M Size Surface area for microbial settlement: 1,030 m²/ℓ (12,319 sq. ft./qt.)



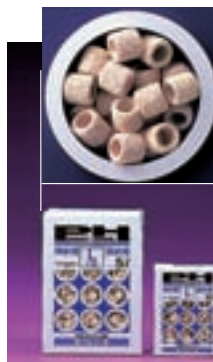
◆5 ℓ (4.5 qt.) ◆1 ℓ (0.9 qt.)

- Soft Type S Size Surface area for microbial settlement: 1,620 m²/ℓ (19,375 sq. ft./qt.)



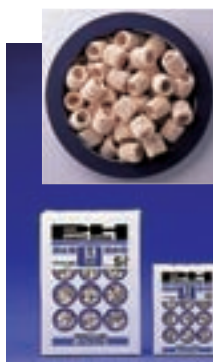
◆5 ℓ (4.5 qt.) ◆1 ℓ (0.9 qt.)

- Hard Type L Size Surface area for microbial settlement: 400 m²/ℓ (4,784 sq. ft./qt.)



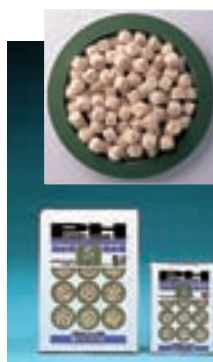
◆5 ℓ (4.5 qt.) ◆1 ℓ (0.9 qt.)

- Hard Type M Size Surface area for microbial settlement: 520 m²/ℓ (6,219 sq. ft./qt.)



◆5 ℓ (4.5 qt.) ◆1 ℓ (0.9 qt.)

- Hard Type S Size Surface area for microbial settlement: 820 m²/ℓ (9,807 sq. ft./qt.)



◆5 ℓ (4.5 qt.) ◆1 ℓ (0.9 qt.)

Basic

- High-performance filtering media available at low cost – For large-size and business-use tanks



- Soft Type L Size 15 X 15 mm (0.59 X 0.59 in.)
- Soft Type M Size 10 X 10 mm (0.39 X 0.39 in.)



◆5 ℓ (4.5 qt.) ◆5 ℓ (4.5 qt.)

- Hard Type L Size 15 X 15 mm (0.59 X 0.59 in.)
- Hard Type M Size 10 X 10 mm (0.39 X 0.39 in.)



◆5 ℓ (4.5 qt.) ◆5 ℓ (4.5 qt.)

MonoBall

- Authentic cellular ceramic filtering medium (Porosity: 53.7%)



◆3 ℓ (2.7 qt.) 1 ℓ (0.9 qt.)

Power House Custom In

- “Custom S”, made of the same materials as high-performance filtering media Power House, packed into a mesh bag made of special material. Easy to handle and maintain.

- Hard Type Slightly-alkaline for saltwater and freshwater
- Soft Type Slightly-acid for freshwater and waterweed



Power House Custom In 100 Hard Type, Power House Custom In 50 Hard Type, Power House Custom In 100 Soft Type, Power House Custom In 50 Soft Type

System Filter

- The professional standard in everything from performance, quality, to durability



● System Filter 1A Soft Type, ● System Filter 2A Soft Type

- 2A 0.50 Hard Type
- 2A 0.50 Soft Type
- 1A 0.50 Hard Type
- 1A 0.50 Soft Type
- 1A 0.25 Hard Type
- 1A 0.25 Soft Type

[All products contain Power House filtering media]



MicroHouse

- High-performance dried bacteria for setting up aquarium water



● L Pack

● Kit

● Pack

Small Filter

- Compact in size, yet high in performance!! Numerous features are housed within the small body



● Hard Type, ● Soft Type



The revolutionary product that gave filtering media, the concept of performance.

Power House

The secret to enjoying aquariums over long periods of time, is in how you create the right environment for microbial activity (biofiltration), and how to maintain it. Power House is the high-performance filtering media with various features that make long-term maintenance of such biofiltration possible.

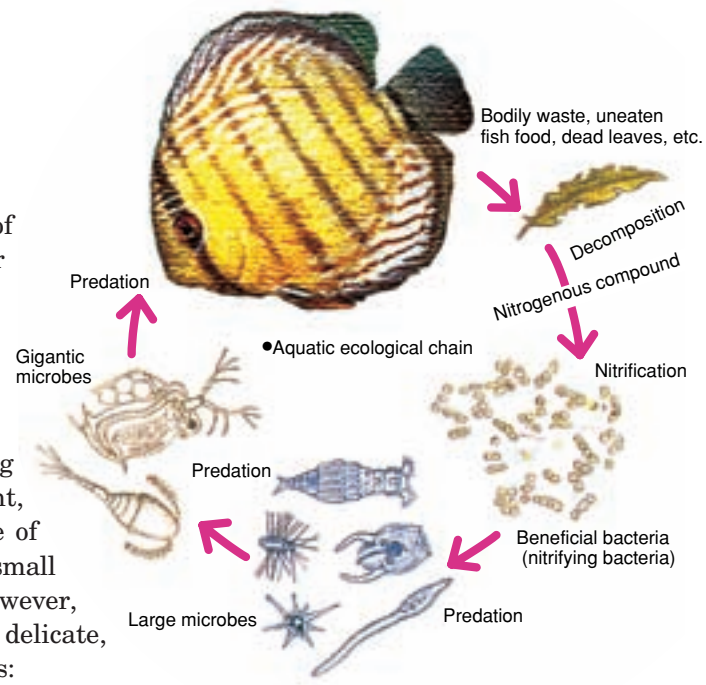
In the natural world, the ecological chain of living organisms, such as the example pictured on the right, keeps the environment balanced. When bodily waste of aquatic organisms such as tropical fish dirty the water, small microbes called nitrifying bacteria clean the water. However, nitrifying bacteria are surprisingly delicate, and have the following characteristics:

1. They are weak against pH change in water
2. When only a certain microbe multiplies prolifically, they die en masse at a certain point
3. They need abundant oxygen

To accommodate each of these characteristics, Power House offers:

1. pH control capability (Hard Type/Soft Type)
2. Microbial-Coexistence control structure.
3. Irregular Raschig ring form

These features enable Power House to maintain stable filtering conditions over long periods of time.



Guideline on Amount to Use

Power House products offer high pH control capability and have vast amounts of surface area. Thus even small amounts of these products can conduct biofiltration. However, by increasing the filter size and amount of filtering media used, filtering power can be increased proportionately. Amount of filtering media does not significantly affect pH change – please adjust with the amount of living organisms in your tank.

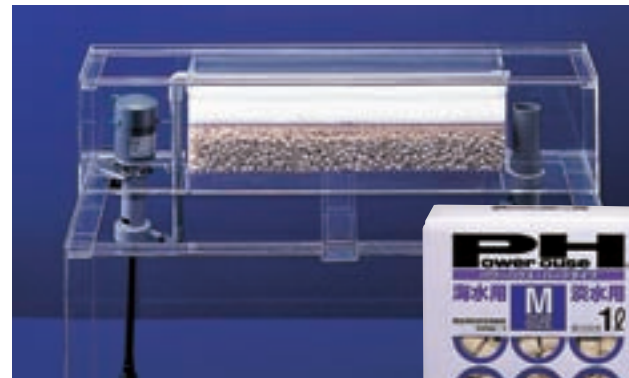
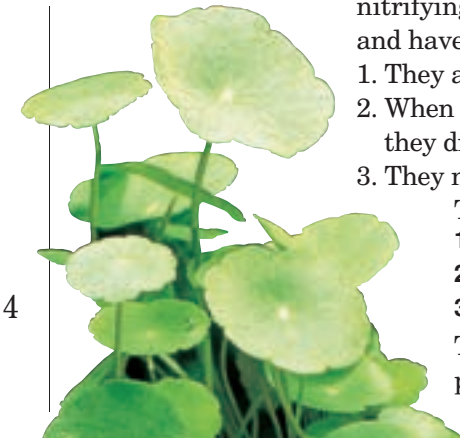
Guideline on Amount to Use

Tank Size (cm/in.) W X D X H	Water Volume (ℓ / gal.) Full-tank	Power House Standard Amount (ℓ / qt.)
60 X 30 X 36 cm (23.6 X 11.8 X 14.2 in.)	60 ℓ (15.9 gal.)	0.5-2.0 ℓ (0.45-1.8 qt.)
90 X 45 X 45 cm (35.4 X 17.7 X 17.7 in.)	180 ℓ (47.6 gal.)	1.5-6.0 ℓ (1.4- 5.4qt.)
120 X 45 X 45 cm (47.2 X 17.7 X 17.7 in.)	240 ℓ (63.4 gal.)	2.5-10.0 ℓ (2.3- 9.0 qt.)
180 X 45 X 45 cm (70.9 X 17.7 X 17.7 in.)	360 ℓ (95.1 gal.)	3.5-14.0 ℓ (3.2- 12.6 qt.)

Power House Size and Guideline on Suitable Filters

	Hood Filter	External Filter	Outer Lauter Tub - Overflow - Wet
Small (30-60cm/12-24in.)	S M L	S M L	S M L
Medium (75-90cm/30-36in.)	S M L	S M L	S M L
Large (120+cm/47 in.+)	S M L	S M L	S M L

S = Small size
M = Medium size
L = Large size
■ Purple text = Suitable
■ Black text = Usable



●Use of Power House Hard Type M Size in a hood filter. (90 cm/ 35 in. tank)



●Use of Power House Soft Type M Size in an external filter. (60 cm/ 24 in. tank)

●Power House Hard Type L Size (15 X 15 mm/0.59 X 0.59 in.) Surface area for microbial settlement: 400 m²/ℓ (4,784 sq. ft./qt.) Controls pH drop



Used mainly for large marine aquariums and aquariums for large fish that tend to cause drop in pH level. Once the water is set up, this product offers the advantage of ease in maintenance.

●Power House Hard Type M Size (10 X 10 mm/ 0.39 X 0.39 in.) Surface area for microbial settlement: 520 m²/ℓ (6,219 sq. ft./ qt.) Controls pH drop



Like the Soft Type M Size, this is one of the most popularly used products. Suitable of course for marine aquariums, it is also a favorite of discus enthusiasts, as discus tend to cause drop in pH level.

●Power House Hard Type S Size (6 X 7 mm/0.24 X 0.28 in.) Surface area for microbial settlement: 820 m²/ℓ (9,807 sq. ft./ qt.) Controls pH drop



This product's extremely high filtering capability makes it powerful even when using in hood filters and submersible filters that fit only small amounts of filtering media.

●Power House Soft Type L Size (15 X 15 mm/0.59 X 0.59 in.) Surface area for microbial settlement: 800 m²/ℓ (9,568 sq. ft./qt.) Controls pH rise



This product is for filters of medium to large-size aquariums. Cost is economical at approximately 75% that of M Size and S Size. Ideal for use in large lauter tubs that require large amounts of filtering media.

●Power House Soft Type M Size (10 X 10 mm/ 0.39 X 0.39 in.) Surface area for microbial settlement: 1,030 m²/ℓ (12,319 sq. ft./qt.) Controls pH rise

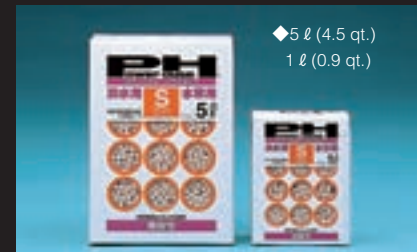
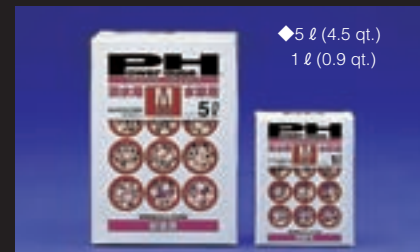
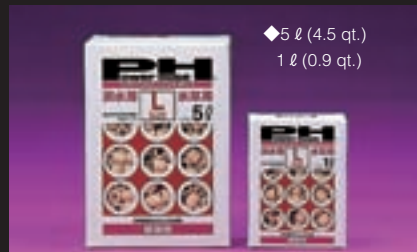
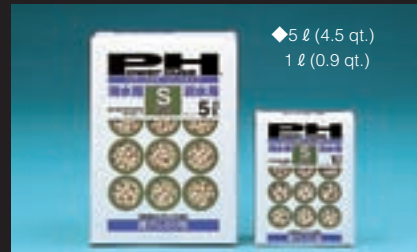
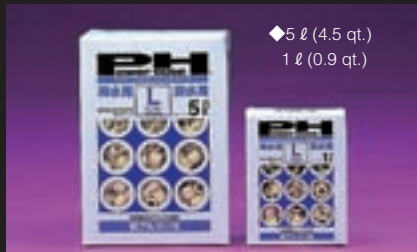


Representative product of the Power House family, this is the all-round type suitable for all filters. It has long been used for discus and waterweed. Currently, use in large aquariums for arowana, etc. is also increasing.

●Power House Soft Type S Size (6 X 7 mm/ 0.24 X 0.28 in.) Surface area for microbial settlement: 1,620 m²/ℓ (19,375 sq. ft./qt.) Controls pH rise



This product has the highest filtering capability of this series. Frequent maintenance is necessary, but set up is fast, and is especially a big favorite of waterweed professionals and enthusiasts.





It is impossible to stabilize pH level with just one type of material. That is where the Power House concept began.

pH Control Capability

The pH of aquarium water changes due to various factors, but some representative factors are:

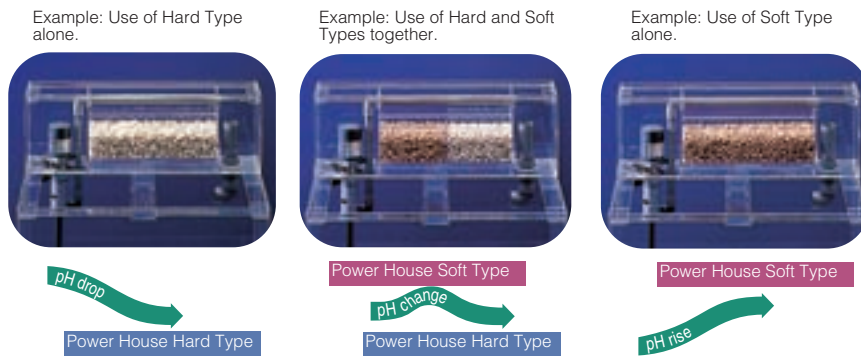
1. When an aquarium is newly set up, carbon dioxide is discharged, raising pH level.
2. Generally in a waterweed aquarium, waterweed photosynthesizes during the day, taking in carbon dioxide, resulting in pH level rise.
3. With aquariums housing many fish or large fish such as arowana, large amounts of food is placed in the water, microbes' (nitrifying bacteria) activity (nitrification) increases nitrate salt, dropping the pH level.

Such are some representative factors, and in any of these cases, the water condition becomes unstable. To accommodate both rise and drop in pH level, Power House offers 2 types of products:

A: Controls pH drop (slightly-alkaline) Hard Type products

B: Controls pH rise (slightly-acid) Soft Type products

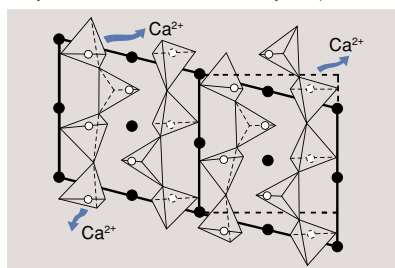
These types used alone or together can stabilize the water's pH level, enabling efficient biofiltration over long periods of time.



Hard Type's pH Drop Controlling Principle

The main component of Power House Hard Type products is calcium silicate crystalline wollastonite. When water begins to oxidize, the product releases calcium ions, controlling the drop of pH level. Different from calcium carbonate (such as coral sand) which constantly emits calcium, the product releases calcium ions when necessary and controls drop in pH level, making it safe not only for saltwater fish and African cichlids, but also for aquariums for discus and arowana which tend to drop in pH level.

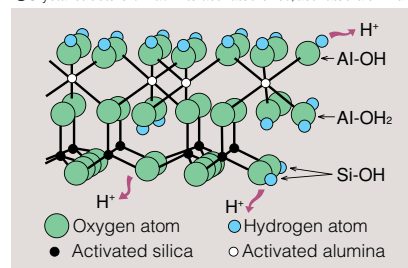
Crystal structure of calcium silicate crystals (wollastonite)



Soft Type's pH Rise Controlling Principle

The main component of Power House Soft Type products is kaolinite activated silica. When water's pH level rises, hydroxy ions in the water increase. The nature of activated silica is such that it takes in the hydroxy ions, and at the same time separates and releases hydrogen ions, controlling pH level from rising. This does not involve emission of acid substance, thus making the product safe for use with all types of living organisms.

Crystal structure of kaolinite activated silica/activated alumina



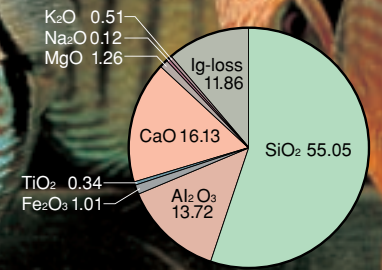
Controls pH Drop Power House Hard Type



Power House Hard Type M Size



Colonial cup coral – Marine aquariums are basically slightly alkaline, making the use of Hard Type products suitable.



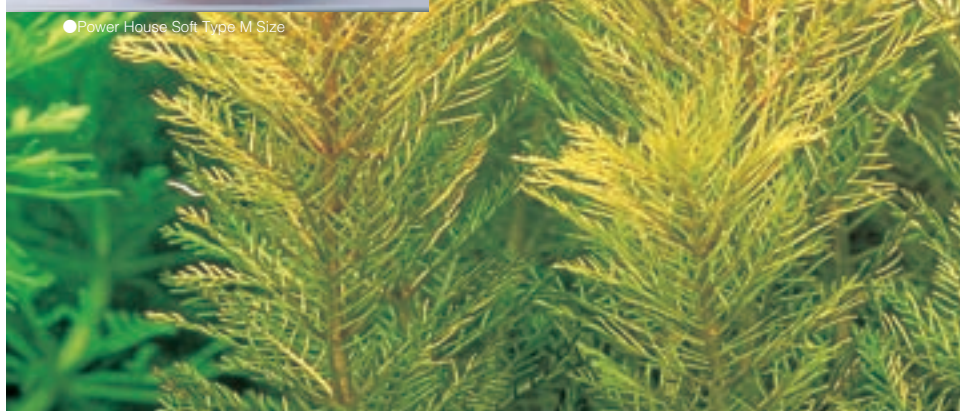
Components ratio of Hard Type products

Discus aquariums are a representative example of tanks in which pH level drop is likely to occur.

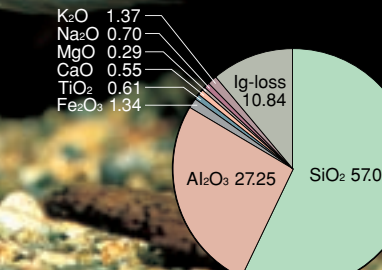
Controls pH Rise Power House Soft Type



Power House Soft Type M Size



Waterweed aquariums are a representative example of tanks in which pH level rise is likely to occur.



Components ratio of Soft Type products

Apistogramma agassizii – Apisto and waterweed favor slightly acid water, making the use of Soft Type products suitable.



Power House is long-lasting!!
The secret is in the extraordinary structure that creates a microbe world.

Microbial-Coexistence Control Structure

In an aquarium tank, fish's bodily waste, uneaten food, dead leaves, etc. become the cause of harmful ammonia, degenerating water quality.

The small microbe that eats that ammonia is called "nitrosomonas". On the other hand, they emit a harmful substance called nitrous acid. Nitrous acid is eaten by small microbe called "nitrobacter", turning it into comparatively-harmless substance, nitrate salt. This cleaning of water by microbes is called the [nitrification process], and the microbes that perform the process, the [nitrifying bacteria]. However, when nitrifying bacteria alone that clean the water, multiply proliferously, they may suddenly die en masse, rapidly degenerating water quality.

In the ecological chain of the natural world, large microbes eat these small microbes, and fish eat the large microbes, resulting in a natural selection cycle.

● In the vast natural world, this ecological chain maintains good balance, constantly keeping the number of microbes at a good level, thus cleaning the water.

However, an aquarium is an artificial world on a much smaller scale, making it extremely difficult to build a microbe world of well-balanced ecological chain using "filtering media" which greatly influences aquarium water. Thus until recently, it had been almost impossible to maintain good water quality over long periods of time.

● The surfaces of Power House rings are rough in texture. This is because they are specially structured with a well-balanced, consecutive matrix design of ultrafine pores ranging from 0.1 micrometer (0.00004 in.) size, to holes of 1,000 micrometer (0.04 in.) size.

This special structure is used not only on the outer surfaces, but inside as well, so that small microbes settle in the Power House ring's pores and large microbes settle in the holes, creating a microbe world with an ecological chain in the filtering media. Each Power House ring can be considered a universe of microbes.

As a result, Power House products make it possible to maintain water quality over the long term, and have become favorites of many professionals and enthusiasts, who favorably evaluate our products as being "Undoubtedly long-lasting and durable".

■ **Special Cellular Structure that Forms the Microbe World**
 Power House rings are of special cellular structure, with pores of various shapes and sizes even on the inside. This special structure makes it possible for small nitrifying bacteria as well as the large microbes that feed on them, to exist in good balance, enabling stable filtering power over long periods of time.

● **Structural comparison of Power House Hard Type (left) and ceramic ring (right).**
 Electron-microscopical images magnified 20X.

■ **Pores per 1 ℓ (0.9qt.) of Power House Product**
 Below graphs compare amount of pores by product size, per 1 ℓ (0.9qt.) of "Power House Hard Type and Coral Sand" (left) and "Power House Soft Type and Seashore gravel" (right). Power House products have numerous pores that are approximately 1 micrometer (0.00004 in.) in size, which is suitable for beneficial bacteria to settle. S size products have notably overwhelming amounts of such pores.

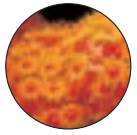
Product	Size	Surface Area (m²/ℓ)
Power House Hard Type	S Size	820
Power House Hard Type	M Size	520
Power House Hard Type	L Size	400
Coral Sand	-	135

Product	Size	Surface Area (m²/ℓ)
Power House Soft Type	S Size	1,620
Power House Soft Type	M Size	1,030
Power House Soft Type	L Size	800
Seashore gravel	-	23

● **Nitrification and Aquatic Ecological Chain**
 Small microbes (beneficial bacteria) break down (nitrification) harmful nitrogenous compound into relatively-safe nitrate salt. Large microbes exist eating such small microbes. The large microbes then become food for the fish.
 Only when good balance of this kind of aquatic ecosystem (ecological chain) is maintained, can aquarium water become good breeding water for its inhabitants.

● **Power House's original structure becomes housing for microbes in the water, generating a balance-maintained ecological chain.**
 The background photo is a model of the Power House ring surface which becomes home for microbes to live and coexist. [1 chip = approx. 2 micrometers (0.00008 in.); beneficial bacterium = approx. 1 micrometer (0.00004 in.); large microbe = approx. 10 micrometers (0.0004 in.)]

Image model of Power House ring's surface



Ring-shaped filtering media with a unique difference that's Power House style.

Irregular Raschig Ring Form

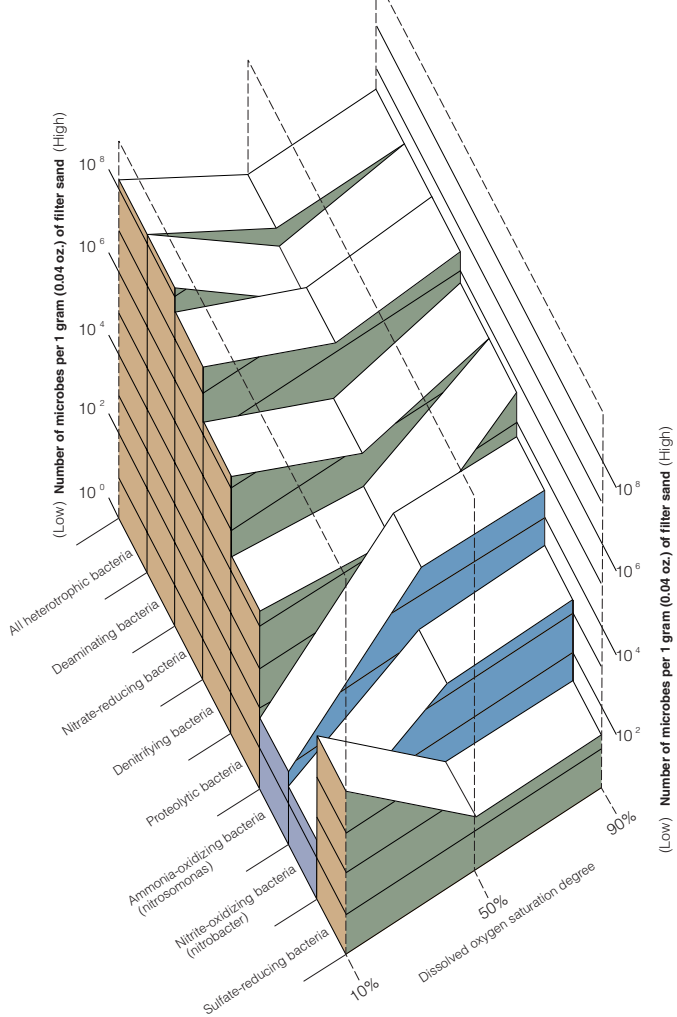
Power House products are shaped like the typical ring form (S Size products are in column form), but a close look shows that the surface has irregular undulations, which finely break down water flow inside the filter, carrying breeding water throughout the filtering media.

Nitrifying bacteria such as nitrosomonas and nitrobacter are so-called aerobic bacteria which constantly need fresh water and the oxygen in it. Thus if dry areas form within the filter, the bacteria cannot be expected to function.

Such dry areas do not form even when using Power House products in a large external filter, and thus nitrifying bacteria as well as other microbes are constantly activated.

Also, as Power House products are unlikely to clog up inside the filter, there is no strain put on the pump either.

Amount of Dissolved Oxygen and the Number of Various Microbes

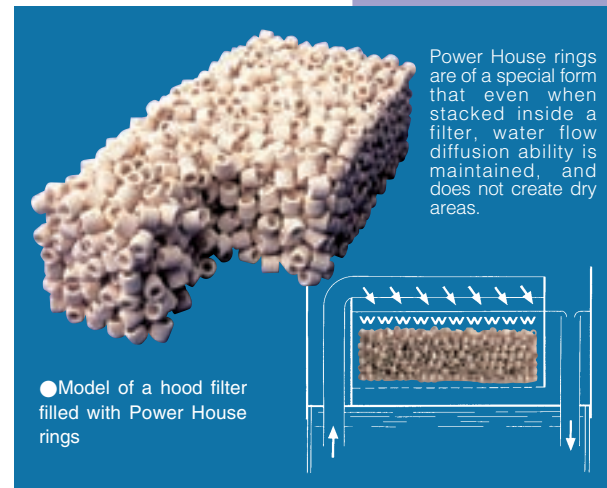
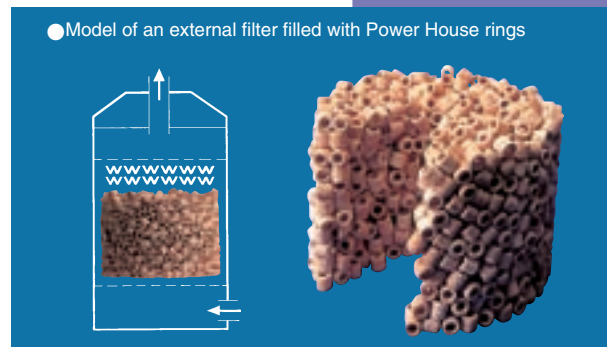


Above graph shows that when oxygen volume is low, the number of beneficial bacteria [ammonia-oxidizing bacteria (nitrosomonas) and nitrite-oxidizing bacteria (nitrobacter)] decrease drastically. To activate beneficial bacteria, smooth supply of oxygen to filtering media is necessary, and to do so, fresh water needs to flow throughout all filtering media set inside the filter. Power House breaks down water flow so that water flows throughout the filter, providing extremely high supply of oxygen, promoting activation of beneficial bacteria and bringing out excellent nitrification ability.

(Source: The Japanese Society of Fisheries Science – Fisheries Science Series 32 by Akira Kawai; Published by Kouseisha-kouseikaku Corp. 1990)

Power House Products Inside the Filter

Power House rings face various directions inside the filter, and the Raschig ring form's characteristic of high performance in water flow diffusion, easily enables oxygen supply to beneficial bacteria.

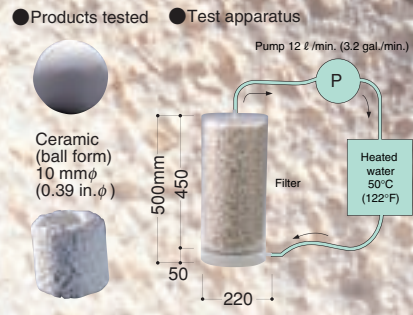


Power House rings are of a special form that even when stacked inside a filter, water flow diffusion ability is maintained, and does not create dry areas.

Water Flow Diffusion Tested Inside a Filter

The degree of water flow diffusion that occurs among filtering media set inside a filter is extremely important in terms of oxygen supply to beneficial bacteria. This experiment compares conditions of water flow diffusion among filtering media set in a filter for:

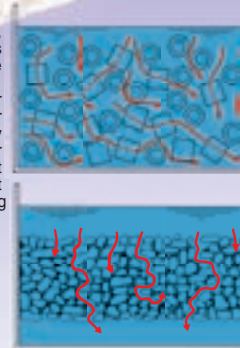
- A. Power House (Raschig ring form)
- B. Ceramic (ball form)



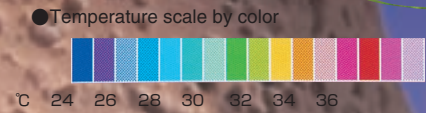
Power House (Raschig ring form) 10 X 10 mm (0.39 X 0.39 in.)

The Form of Power House Products Make them Unlikely to Clog

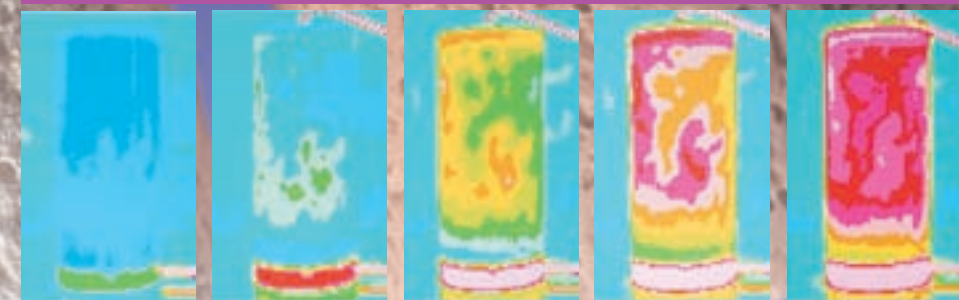
When filter media clogs, water flow decreases and promotes emergence of anaerobic bacteria. The form of Power House rings (upper right diagram) not only enables high water flow diffusion, but at the same time makes it unlikely to clog, providing ample oxygen supply.



Results in photos below show that the water flow diffusion of Power House filtering media is far more superior. This characteristic of Power House products promotes activation of beneficial bacteria, and creates good breeding water.

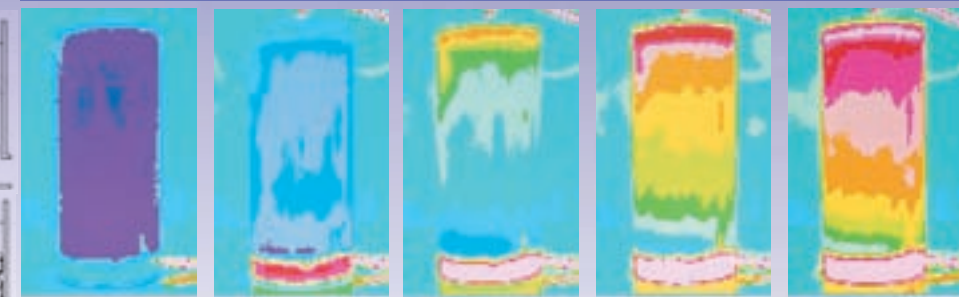


Power House (Raschig ring form)



After 2 min. Apparent that heated water is entering from the bottom
 After 4 min. Temperature change and effects of water flow dispersal already apparent towards the bottom.
 After 6 min. Effects of water flow dispersal become apparent.
 After 8 min. Further effects of water flow dispersal become apparent throughout.
 After 10 min. Initial temperature has diffused all-throughout. Effects of water flow dispersal are self-evident.

Ceramic (ball form)



After 2 min. Apparent that heated water is entering from the bottom
 After 4 min. Temperature change seen only at the bottom.
 After 6 min. Due to convective flow, slight temperature change begins at the top.
 After 8 min. Slight temperature change seen only at the top.
 After 10 min. Change from initial temperature apparent only at the top. The change does not spread all-throughout.

All units in quarts/inches/feet/ounces are approximate.



Waterweeds basically raise the water's pH level. However, many waterweeds prefer slightly-acid water.

Waterweed/Small Koi/ Small Characin/ Shrimp/etc.

The main component of Power House Soft Type products is activated silica, which controls rise in pH level, providing stable water quality and making the water ideal for waterweed aquariums as well as for small characin, shrimp and many types of freshwater fish that favor slightly-acid water.

Especially as waterweeds photosynthesize during the day, consuming carbon dioxide, the pH level rises approximately 0.5 to 1.0. Many waterweeds are not strong against high pH levels. Thus by using Power House Soft Type products, rise in pH level can be actively controlled to stabilize water quality.



Marble hatchet

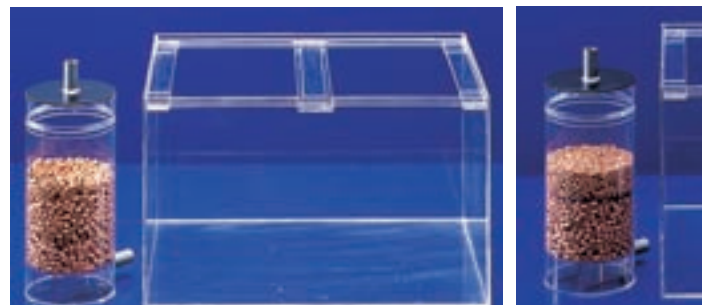


Crystal wort



Ram cichlid

●Waterweed Aquariums and Power House Soft Type Products
There are numerous factors both inside and outside an aquarium that cause pH level to rise. Bottom sand and filtering media play key roles in maintaining stable water quality. As Power House Soft Type products control the rise of pH level, creating stable water conditions, they are the ideal filter media for waterweed aquariums. An external filter is normally used in many cases for waterweed aquariums to prevent carbon dioxide scatter, but water flow dispersal occurring inside and filtering efficiency should be taken into account, to choose the filter media product of appropriate size for the filter's capacity.



●Set-up examples of use in external filter for 60 cm tank
(L 600 X W 450 X H 360 mm/L 23.6 X W 17.7 X H 14.2 in.)
[Left] Power House Soft Type M Size / [Right] Combined use of Power House Soft Type M and S Sizes



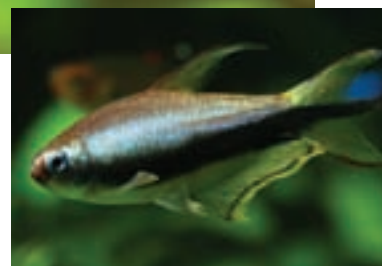
●Set-up examples of use in external filter for 90 cm tank
(L 900 X W 450 X H 450 mm/L 35.4 X W 17.7 X H 17.7 in.)
[Left] Power House Soft Type L Size / [Right] Combined use of Power House Soft Type L and S Sizes



●Soft Type L Size 1 ℓ (0.9qt.) ●Soft Type M Size 1 ℓ (0.9qt.) ●Soft Type S Size 1 ℓ (0.9qt.)



Black darter tetra



Emperor tetra



SS grade crystal red shrimp



Water of aquariums mainly for fish, tends to drop in pH level over time, degrading water conditions. Power House Hard Type products are the answer to this problem.

Discus/Arowana/ Corydoras/Pleco/ Guppy/Platyfish/etc.

With aquarium water for fish such as discus, corydoras and pleco, depending on the number of fish, their size and amount of fish food or feces, microbial nitrification activity can become very active which sometimes results in a bigger than necessary drop in pH level. The same is true for large fish like arowana, and in general, aquariums mainly for fish, often experience drops in pH level. To avoid this situation, we recommend using Power House Soft Type to set up the water in the early stage of breeding, and over time as the fish grow in size and number, leading to increase in fish food, change to using together with Power House Hard Type. Hard Type's main component wollastonite (calcium silicate), is of a mild nature and works to control drop in pH level. Use Soft Type as the main, then gradually add Hard Type, stabilizing water quality over the long term.

Example of combined use of Power House Soft Type (controls pH rise) and Hard Type (controls pH drop), to create comfortable water conditions, using a hood filter.



First stage of breeding

When setting up water in the early stage of breeding, use Power House Soft Type alone to control rise in pH level, for water that's more or less neutral. Photo shows example of Power House Soft Type used alone in a hood filter.

Second stage of breeding

In aquariums mainly for fish, due to various factors such as amounts of fish food and feces, etc., within 3 to 6 months, a bigger than necessary drop in pH level may occur. In such case, add Power House Hard Type in approximately half the amount of Soft Type. Photo shows example of Soft : Hard ratio of 1.0 : 0.5.

Third stage of breeding

If pH level continues to drop even after taking the actions shown for the first 2 stages, add more Power House Hard Type, making the amounts of Soft and Hard Types equal. Photo shows example of Soft : Hard ratio of 1.0 : 1.0.



Golden German yellow tuxedo



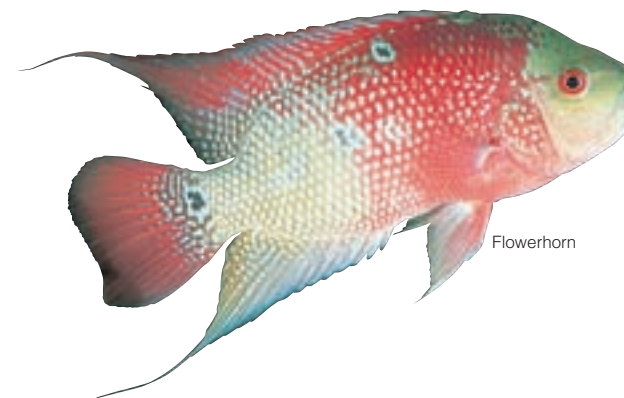
Asian arowana



Turquoise discus



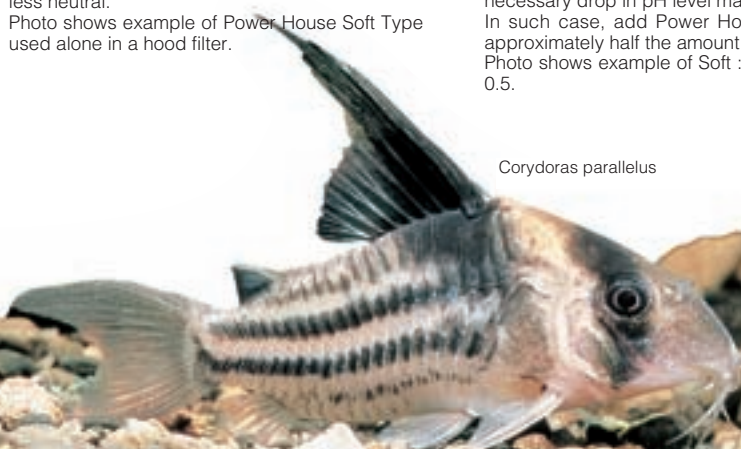
Royal green discus



Flowerhorn



Orange fin kaiser



Corydoras parallelus

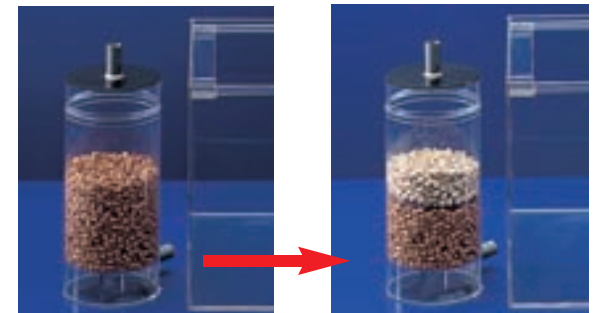


Corydoras panda



Hard Type L Size 1 ℓ (0.9qt.) Hard Type M Size 1 ℓ (0.9qt.) Soft Type L Size 1 ℓ (0.9qt.) Soft Type M Size 1 ℓ (0.9qt.)

Example of combined use of Power House Soft Type (controls pH rise) and Hard Type (controls pH drop), to create comfortable water conditions, using an external filter.



[Left] Soft Type used alone

When setting up water in the early stage of breeding, use Power House Soft Type alone to control rise in pH level, for water that's more or less neutral.

[Right] Soft and Hard Types used together

When drop in pH level is seen, use together with Hard Type. If pH level still continues to drop, gradually increase the amount of Hard Type.



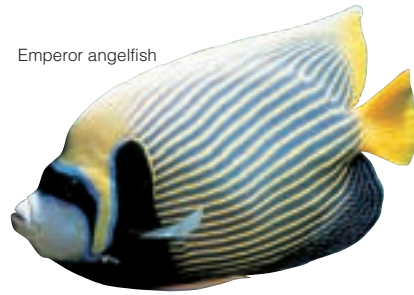
In the natural world, some living organisms are born suited only to slightly-alkaline water.

African Cichlid/ Saltwater Fish/ etc.

Saltwater fish and nonvertebrate organisms, as well as fish like cichlid that inhabit waters such as Lake Malawi and Lake Tanganyika are suited to slightly-alkaline, somewhat hard water, and in many cases, coral sand is used for breeding. Coral sand does enable significant raising of pH level, but its main component calcium carbonate (calcite crystal) is high in chemical stability, leading to decrease in calcium release after approximately half a year, in turn making it easy for the pH level to drop. Power House Hard Type products' main component being calcium silicate (wollastonite crystal), isn't as high at first in inherent pH as coral sand, but maintains the power to control drop in pH level over the long term, making for a breeding-suited environment of such fish.



Gold ocellatus



Emperor angelfish



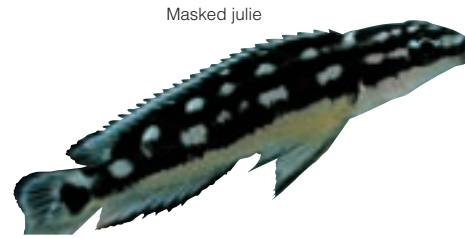
Feather duster worm



Juvenile emperor angelfish



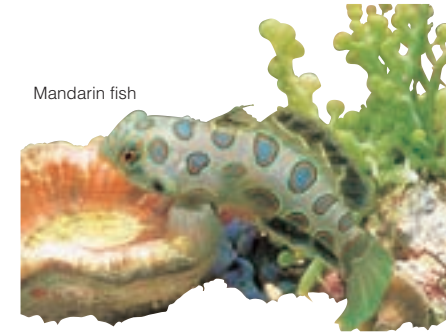
Rainford's butterflyfish



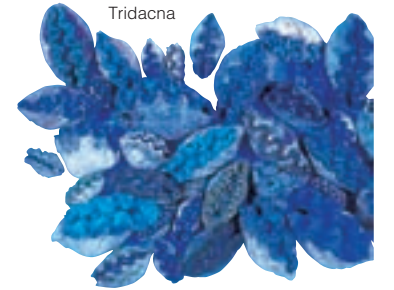
Masked julie



Catalina goby



Mandarin fish



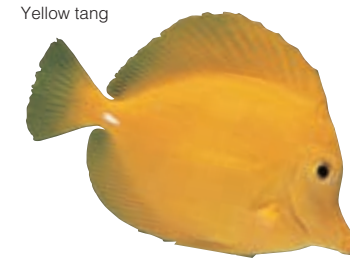
Tridacna



Green spotted puffer



Striated frogfish



Yellow tang



Royal gramma

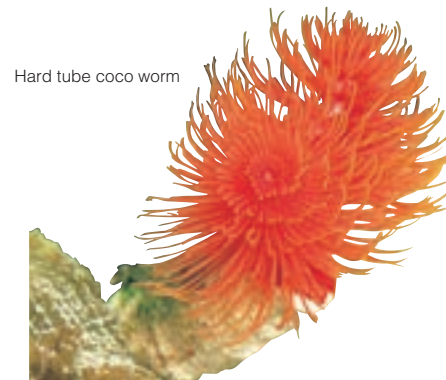
Spine-cheek anemonefish



Caribbean seahorse



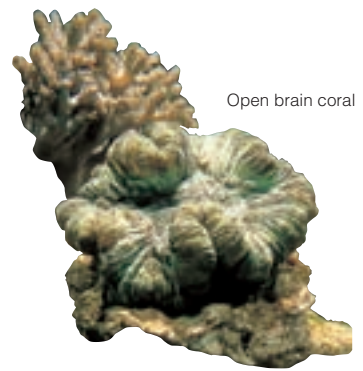
Purple firefish goby



Hard tube coco worm



Japanese pistol shrimp



Open brain coral



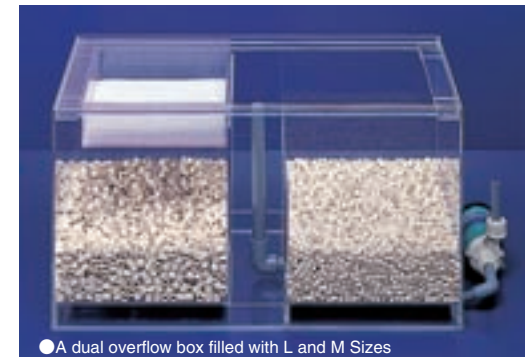
●Hard Type L Size 1 ℓ (0.9qt.) ●Hard Type M Size 1 ℓ (0.9qt.) ●Hard Type S Size 1 ℓ (0.9qt.)



●An external filter filled with M Size



●A hood filter filled with M Size (90 cm/35.4 in. aquarium)



●A dual overflow box filled with L and M Sizes

Seagrass – Halicoryne wrightii

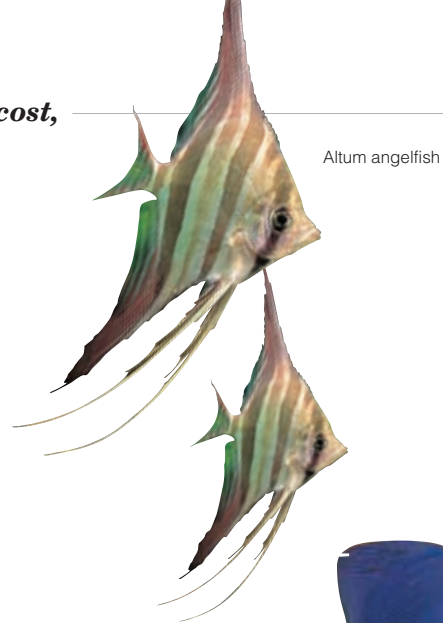




High-performance filtering media at low cost, for large-size and business-use tanks.

Power House Basic

Power House Basic is the business-use version of our high-performance filtering media that come in a 5 ℓ /4.5qt. package for aquarium enthusiasts. Materials and manufacturing method are the same as for Power House products, but is made with a shortened manufacturing process that makes the low cost possible. It is used by many professional shops, aquariums facilities, etc.

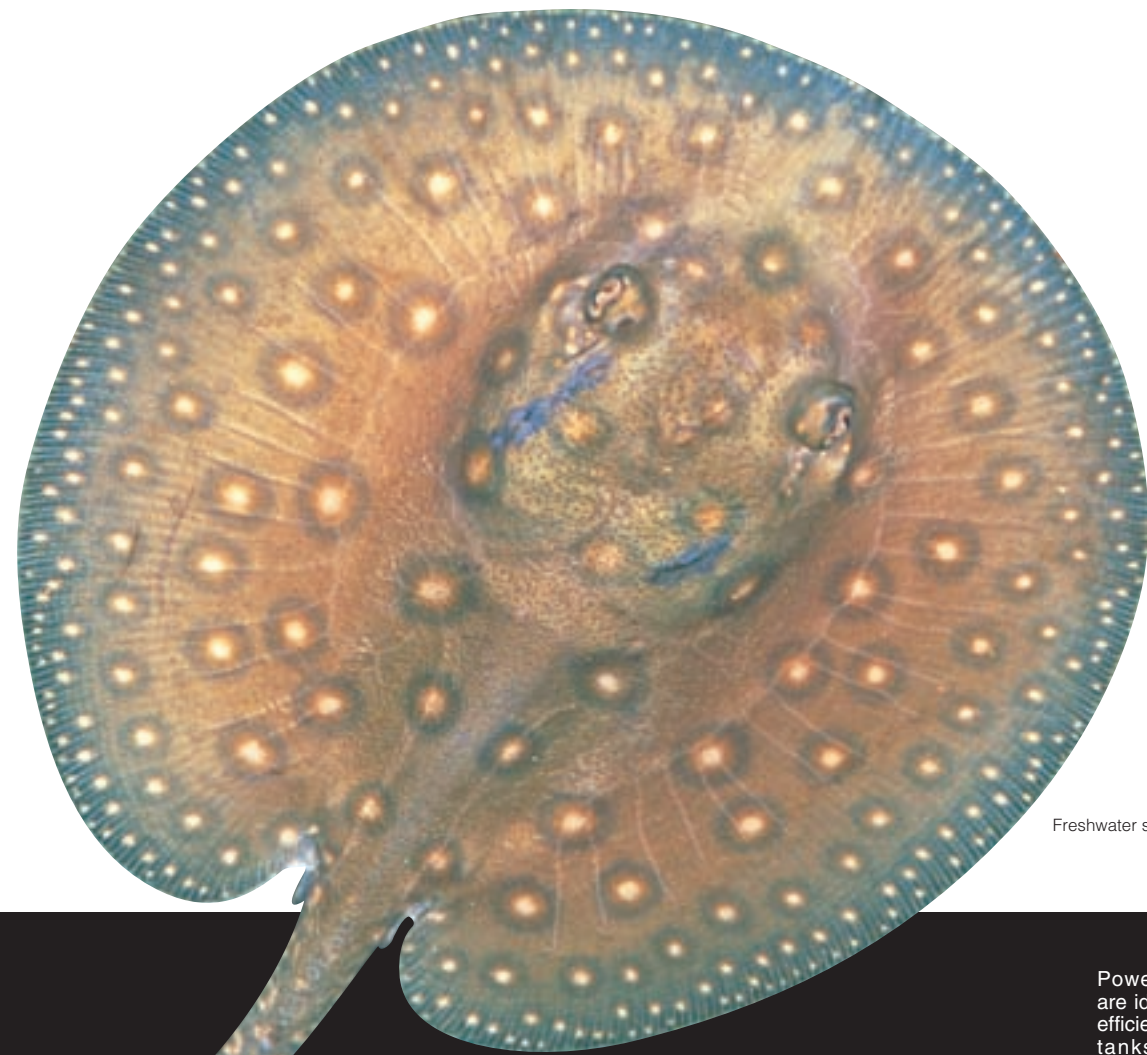


Altum angelfish

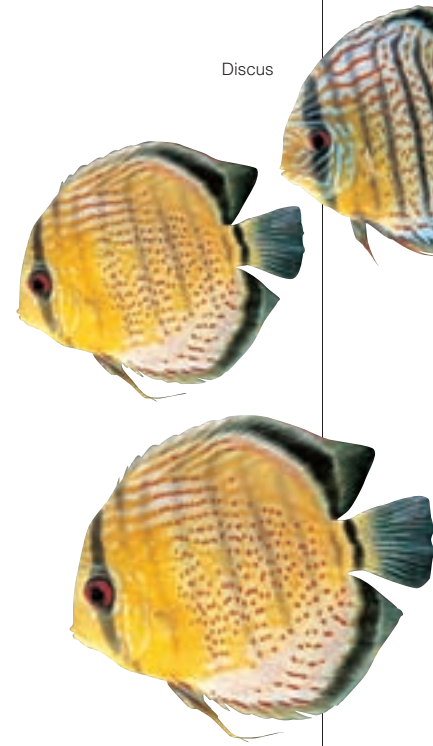
Purple tang



Flowerhorn



Freshwater stingray



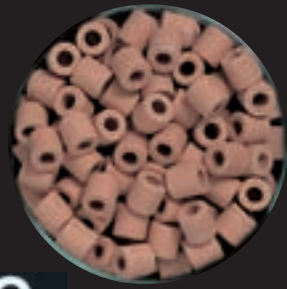
Discus



Basic Soft Type L Size
15 X 15 mm (0.59 X 0.59 in.)
Surface area for microbial settlement:
480 m²/ ℓ (5,741 sq. ft./qt.)
Slightly-acid; Controls pH rise
◆5 ℓ /4.5qt.



Basic Soft Type M Size
10 X 10 mm (0.39 X 0.39 in.)
Surface area for microbial settlement:
620 m²/ ℓ (7,415 sq. ft./qt.)
◆5 ℓ /4.5qt.



BASIC

Basic Hard Type L Size
15 X 15 mm (0.59 X 0.59 in.)
Surface area for microbial settlement:
240 m²/ ℓ (2,870 sq. ft./qt.)
Slightly-alkaline; Controls pH drop
◆5 ℓ /4.5qt.

Basic Hard Type M Size
10 X 10 mm (0.39 X 0.39 in.)
Surface area for microbial settlement:
310 m²/ ℓ (3,708 sq. ft./qt.)
Slightly-alkaline; Controls pH drop
◆5 ℓ /4.5qt.



- **pH property:**
Both Soft and Hard Types same as respective Power House products.
- **Surface area for microbial settlement:**
Approx. 60 % of Power House products, making it easy for microbes to settle.

Power House Basic products are ideal in improving economic efficiency when using large-size tanks, for breeding a large number of fish or for breeding large-size fish.



Asian arowana



Ultra scarlet trim pleco

●All units in quarts/inches/feet/ounces are approximate.



Easily create water like the pros and enthusiasts (biofiltration)!! An almighty simplicity of use.

Power House MonoBall

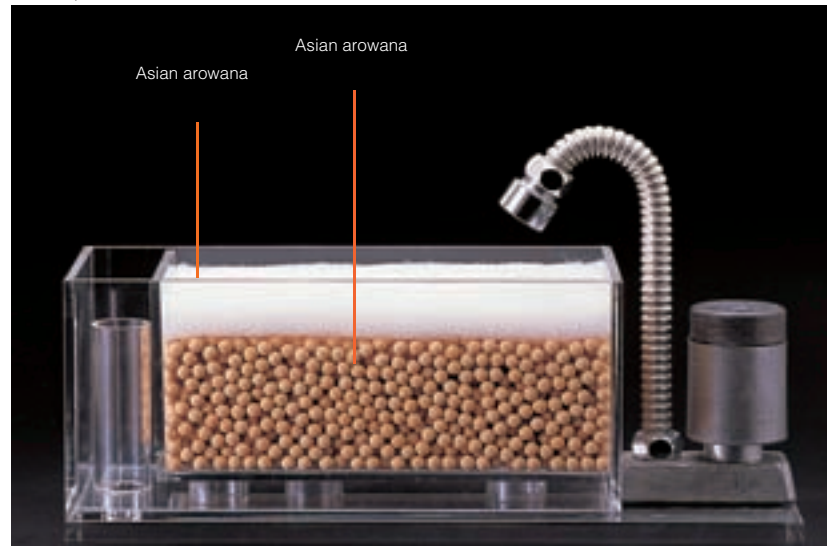
Creating water is the basic point in aquariums. Good breeding water is created by microbial activity in the water, and both fish and waterweed thrive in water with good microbial balance.

However, "creating good breeding water" is a world with depth, requiring experience and skill, and in general, a difficult obstacle for beginners.

Power House MonoBall was developed to make it possible even for beginners to easily create an environment for biofiltration, and provides high performance in all types of filters.



● Example of use in a hood filter



● Use in external filter - Example 1



● Use in external filter - Example 2



● Use in external filter - Example 3



Suited for All Types of Filters

Power House MonoBall can be used in all types of filters, but due to their form, is most suited for use in hood filters, bringing out this type of filter's maximum performance. It is also good for setting up water with an external filter fitted with multiple compartments, and enables high-performance filtering over long periods of time.

[Left] ● Model of usage in a hood filter

Power House MonoBall (biofiltration) and wool filter mat (physical filtration) used together.

[Below] ● Model of usage in an external filter

1. Power House MiniBall used in all compartments. This Example 1 widely accommodates needs of waterweed aquariums, small characin, and relatives of the small koi.
2. Combined use with Power House Soft Type M Size in the first compartment. Compared to the above example using only MonoBall, this Example 2 brings out the maximum power of an external filter.
3. This usage is suited for controlling drop in pH level, and combines the use of Power House Hard Type M Size. This Example 3 proves highly effective in pH control in aquariums for fish requiring large amounts of food like corydoras, pleco, guppy, discus, etc. in which pH level drop can easily occur.



Harlequin rasbora



Prolific crypt



Golden German yellow tuxedo



Apistogramma



Emperor tetra



Corydoras parallelus



Asian arowana



Full-color Hong Kong discus



Power House MonoBall makes it easily possible to set up comfortable water environment for waterweed and fish, but for above suitable species examples indicated in purple text, we recommend combined use together with Power House Hard Type if breeding water begins to become oxidized.

Waterweed – Glossostigma



● System Filter

Power House MonoBall also works superbly in compact-size submersible filters such as the Power House System Filter.

● External filter

When using MonoBall in an external filter, in consideration of water circulation, we recommend combined use together with a ring-shaped filter media such as Power House. [Left] MonoBall only [Right] With Power House



● Hood filter

Power House MonoBall is of ball form, making it most suited for use in hood filters, bringing out this type of filter's maximum performance.



◀ [Left] The moment Power House MonoBall is put in water, air bubbles spray out of the countless pores. It is these pores that become favorable habitats for microbes, producing and maintaining the delicate ecosystem and sustaining biofiltration for long periods of time.

▶ [Right] Over half of each piece of Power House MonoBall consists of pores, and is 1/3 the weight of a normal ceramic ball.

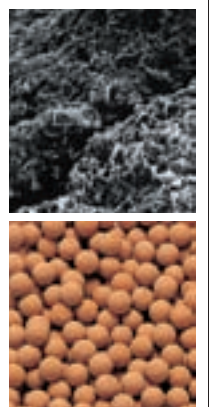


Ceramic balls: 1,400 g (49.0 oz.)

MonoBall pieces: 550 g (19.3 oz.)

▶ [Upper Right] Electron-microscopical image of the inside of a MonoBall, magnified 200X. MonoBall is made of porous ceramic with each piece consisting of 53.7% pores, making it possible for a good balance of microbes to settle through to the insides of the pieces, enabling stable biofiltration over the long term.

▶ [Lower Right] MonoBall pieces





Power enhanced external filter
 Low cost-type with high-performing filtering media (Custom S),
 the same material used in Power House

Power House Custom

- pH control capability
- Easy to handle and maintain
- Increased surface area for microbial settlement
 (Compared to Power House and Basic)

Filtering media for external filters
Custom In 50 · 100
 (External hang-on filters, with high-performance "Power House Custom S" filter media packed into a mesh bag made of Special material)

Custom S Size
 (Single-piece filtering media, 300m ℓ)

Hard Type pH drop controlling feature ● Slightly alkaline for salt and fresh water

Product developed by processing the surface of Power House Basic, significantly increasing surface area for microbial settlement (760m²/ℓ : 9,089sq. ft./qt.).

Custom In 100



Custom In 50



Power House Custom S Size



300m ℓ (0.27qt.)

Suitable for ...

- Salt water fish
- Platyfish
- African cichlid
- Corydoras
- Pleco
- Guppy etc.

Soft Type pH rise controlling feature ● Slightly acid for fresh water and waterweed

Product developed by processing the surface of Power House Basic, significantly increasing surface area for microbial settlement (940m²/ℓ : 11,242sq. ft./qt.).

Custom In 100



Custom In 50



Power House Custom S Size



300m ℓ (0.27qt.)

Suitable for ...

- Waterweed
- Red bee shrimp
- Small characin
- Small Koi etc.

Use

Custom In 50 · 100

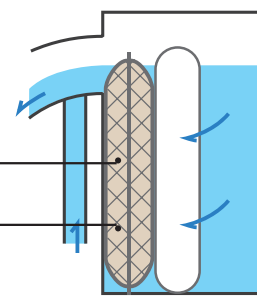


Setting it in an external hang-on filter significantly improves filtering performance.

As filtering material for external filter

As replacement for Custom In

Use for external filters



■ Please rinse Custom S and Custom In well with water prior to use.

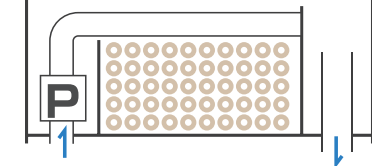
■ If filtering media clogs with solid substances, etc., replace mesh bag contents with "Power House Custom S Size"

Custom S Size

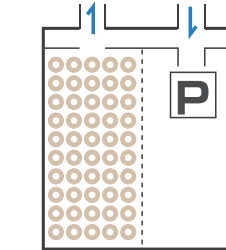


As filtering media for compact filters

Use for upper filters



Use for compact external filters



■ When the product becomes soft that can be squished with fingers, it means that its pH controlling function have weakened and the filtering media will need to be replaced.



Power House is perfect for breeding red shrimp, which are sensitive to even the slightest changes in water quality.



Stable water quality is essential for breeding young fish.



**For creating water to start up an aquarium.
For stabilizing water quality when changing aquarium water.
To prevent problems in water conditions!!**



MicroHouse (Kit/Pack)

MicroHouse is the ideal “water condition creating kit” when starting up an aquarium. MicroHouse Pack contains a blend of 9 types of dormant, dried bacteria functional in setting up aquarium water, activator agent for the dried bacteria, 4 types of organic waste degrading enzymes (protein, sugar, cellulose, fat) and highly powerful activated carbon.

By setting MicroHouse inside the tank or in a filter, it quickly breaks down and adsorbs feces and uneaten fish food, and promotes increase of beneficial bacteria such as nitrifying bacteria. MicroHouse creates the ideal breeding water for fish and waterweed. Also, when changing aquarium water, MicroHouse stabilizes water quality and is highly effective in preventing unexpected problems from occurring in water quality.

●MicroHouse Kit

MicroHouse Kit comes as a set of 1) MicroHouse Pack (2 pieces), 2) Power House Stick made with high-performance Power House as its base and 3) an exclusive case. Set the Stick in its exclusive case and place in a part of the tank where water circulation is good, using the rubber suction cup included in the kit, and just like that, set up is complete.



■MicroHouse Kit

●MicroHouse Pack

MicroHouse Pack contains a blend of 1) dormant, high-performance dried bacteria (9 types), 2) microbe activator agent, 3) organic waste degrading enzymes (4 types) and 4) highly powerful activated carbon, set inside a “bonded material packet”. MicroHouse Pack is sold as a set of 3, with each packet individually enclosed in an aluminum material package.



■MicroHouse Pack – Set of 3 packets

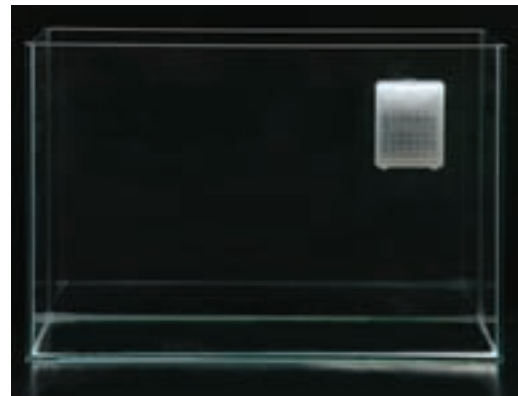


●SS grade crystal red shrimp – Using external filter + Power House Soft Type M Size + MicroHouse (Photo courtesy of Munechika Fish Farm: <http://www.mff.jp/>)

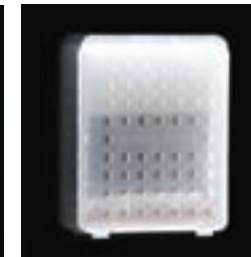
■MicroHouse Pack - Guideline on Amount to Use

Tank Size (cm/in.)	Water Volume (ℓ/gal.)	# of Packs
45 X 30 X 30 cm (17.7 X 11.8 X 11.8 in.)	40 ℓ (10.6 gal.)	1
60 X 30 X 36 cm (23.6 X 11.8 X 14.2 in.)	60 ℓ (15.9 gal.)	1-2
90 X 45 X 45 cm (35.4 X 17.7 X 17.7 in.)	180 ℓ (47.6 gal.)	3-4
120 X 45 X 45 cm (47.2 X 17.7 X 17.7 in.)	240 ℓ (63.4 gal.)	4-6

- The amount of MicroHouse that should be used, depends on the tank size and types/size/number of organisms being bred. Guideline of standard amounts is as shown in the above chart.
- MicroHouse Pack should be exchanged at a pace of approximately once a month.
- Take care not to spill the contents of MicroHouse Pack before usage, as active ingredients necessary to breed the bacteria may leak out.



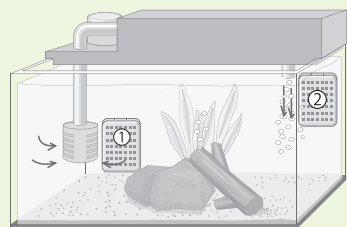
●Example of MicroHouse set inside a 45 cm (17.7 in.) tank



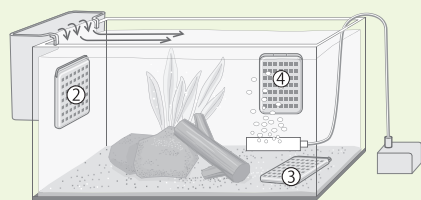
●Power House Stick

●Setting MicroHouse in the Aquarium Effectively

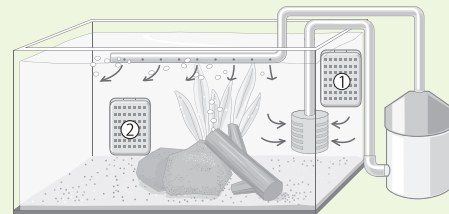
Place the MicroHouse Pack in the case and set inside the tank to start up microbial activity. Be sure to attach the case in a part of the tank that enables the activated bacteria to settle easily into the filtering media and bottom sand. Recommended areas are near: 1) filter's inlet 2) filter's outlet, 3) on the bottom sand or 4) aeration. Or inside various filter types.



■Example of use with a hood filter

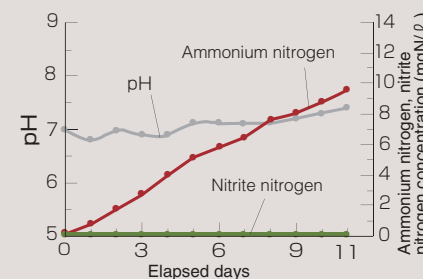


■Example of use with a hang-on-side filter

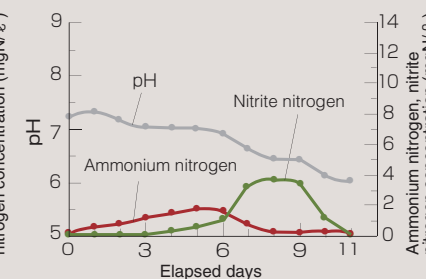


■Example of use with an external filter

●Without MicroHouse



●Using MicroHouse



●MicroHouse Tested in Aquarium Tank

The graphs on the left show test results using two 45 cm (17.7 in.) tanks, one using MicroHouse and the other without using MicroHouse, tracking water conditions daily over a 12-day period, during which no water change was made. The same number of living organisms were placed in each of the tanks (and fed). The ammonia concentration in the tank without MicroHouse kept on increasing, degrading water condition, while the breeding water in the tank using MicroHouse set up nicely from the initial stage.

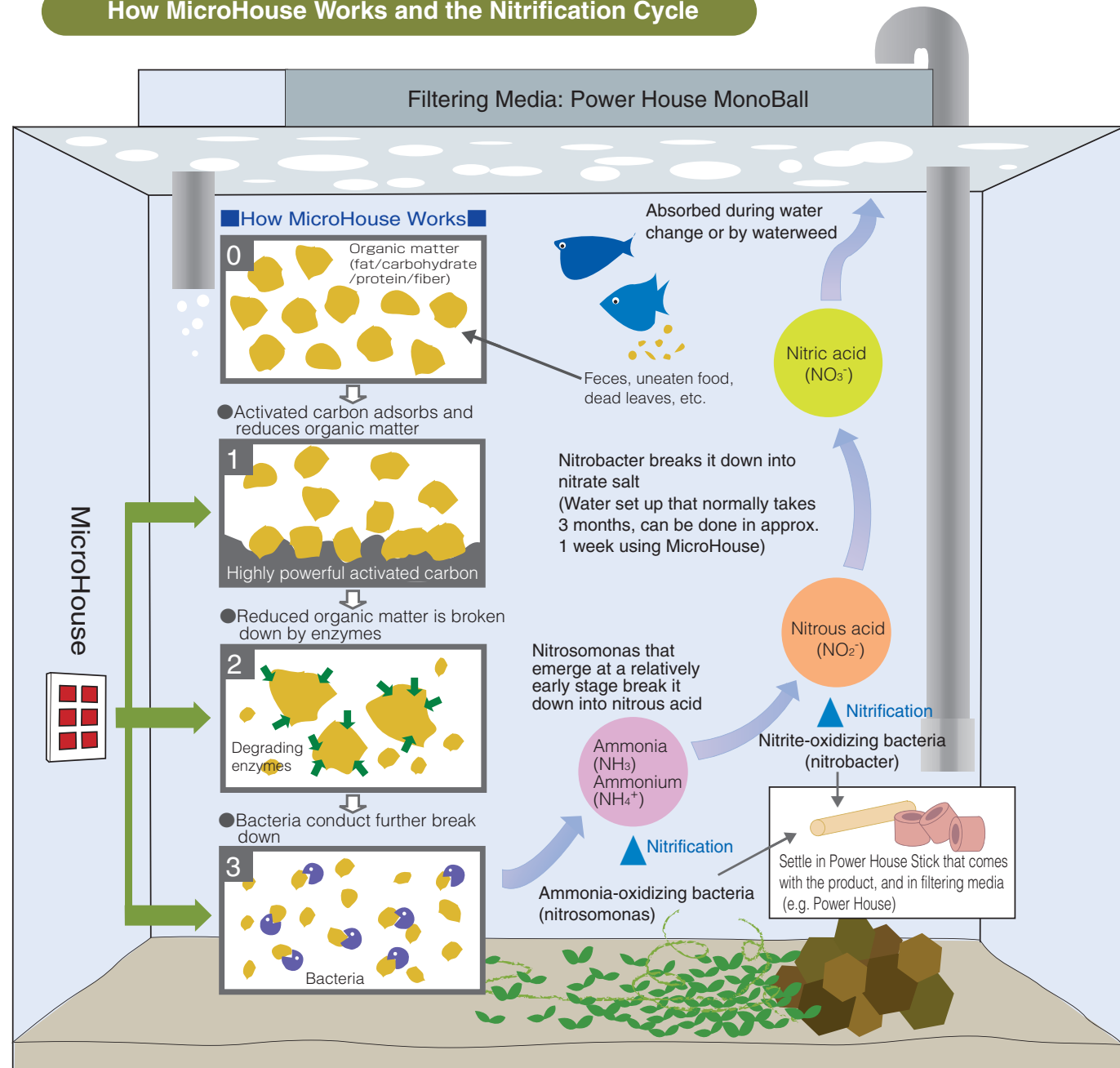


Setting up water in the start up stage and stabilizing water quality are challenging tasks even for aquarium enthusiasts and needless to say, for beginners. MicroHouse creates the ideal water environment for your aquarium.

- In nature's rivers, lakes and seas, numerous bacteria break down organic matter, creating a nitrification cycle and sustaining various ecosystems. However, when setting up new aquarium water, it does not yet have the bacteria that exist commonly in waters of the natural world.
- The 9 types of dried bacteria contained in MicroHouse awaken from their dormant state when the product is put into water, and immediately become active. The activator agent also contained within, activates the bacteria that have awoken, causing them to quickly break down fat, carbohydrate, protein and fiber from

- fish food, feces and dead leaves.
- The organic waste degrading enzymes enhance break down speed, contributing to the process by accelerating it.
- Simultaneously, the highly powerful activated carbon adsorbs organic matter, reducing overall nitrogen concentration. This leads to the emergence of nitrifying bacteria (nitrosomonas and nitrobacter) from an early stage, which serve in breaking down highly toxic ammonium nitrogen and nitrite nitrogen that will emerge in time, and a nitrification cycle is quickly built within the aquarium.

How MicroHouse Works and the Nitrification Cycle



Manifests its power when starting up water for large-size aquariums!!

MicroHouse L Pack

MicroHouse L Pack is the economical solution "large-size MicroHouse Pack" offering the bulk amount of high-performance dried bacteria necessary in a large-size aquarium (90cm/35.4in. to 120cm/47.2in. tank). It is the ideal "water creating kit" when starting up a large-size aquarium. Using L Pack provides the economical way to setting up suitable breeding water for fish and waterweed from an early stage, even in the case of a large-size tank.

- The amount of MicroHouse L Pack that should be used, depends on tank size, and types/size/number of organisms being bred. Guideline of standard amounts is as shown in the chart to the right.
- MicroHouse L Pack should be exchanged at a pace of approximately once a month.

MicroHouse L Pack - Guideline on Amount to Use

Tank Size (cm/in.)	Water Volume (ℓ/gal.)	# of L Packs
90 X 45 X 45 cm (35.4 X 17.7 X 17.7 in.)	180 ℓ (47.6 gal.)	1
120 X 45 X 45 cm (47.2 X 17.7 X 17.7 in.)	240 ℓ (63.4 gal.)	1
150 X 60 X 60 cm (59.1 X 23.6 X 23.6 in.)	540 ℓ (142.7 gal.)	2
180 X 60 X 60 cm (70.9 X 23.6 X 23.6 in.)	650 ℓ (171.7 gal.)	3

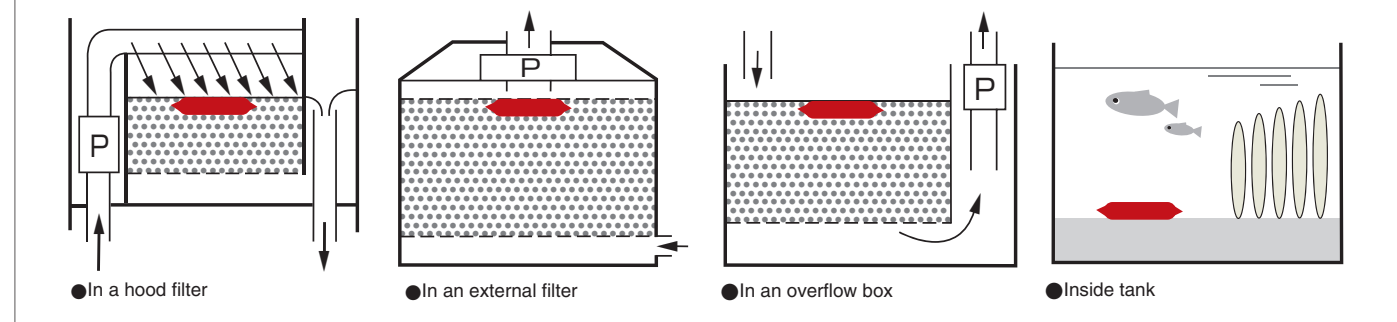


MicroHouse L Pack



SS grade crystal red shrimp - Using external filter + Power House Soft Type M Size + MicroHouse L Pack (Photo courtesy of Munechika Fish Farm: <http://www.mff.jp/>)

Examples of Where to Set MicroHouse L Pack [Red arrow in the diagrams = L Pack]



All units in quarts/inches/feet/ounces are approximate.



*The convenient way to enjoy breeding.
The unique glass bottle submersible filter
high in quality, durability and performance.*

Power House System Filter

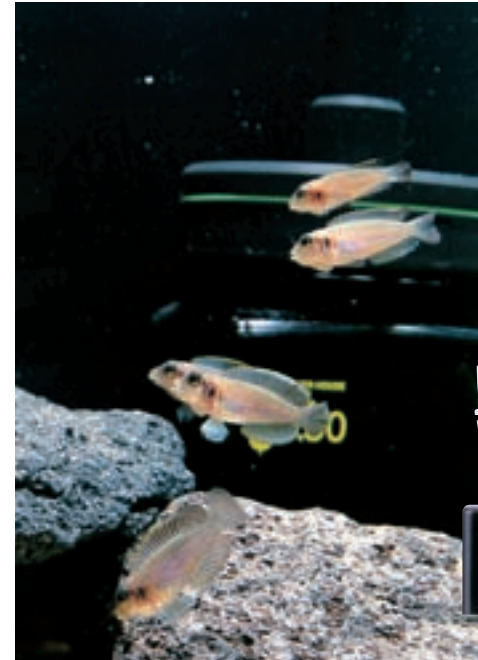
If you get particular about water quality, filter apparatus tends to become large scale and complex. To maintain good water quality in a more convenient manner – that is the wish of many aquarists.

Power House System Filters were developed to answer that wish, fulfilling satisfaction of water creation (breeding) conveniently, with glass bottle body containing Power House M Size, making for unique and high-performance submersible filters.

In addition to being high-performance, they offer unrivaled durability because the main body is made of glass, resin parts are made of polyacetal and the air tube that comes as accessory is made of 100% silicon.



System Filter 1A Hard Type 0.25 and guppy (German yellow tuxedo)



System Filter 1A Hard Type 0.50 and gold ocellatus



Types of System Filters

System Filters come in 2 varieties: 1A and 2A, and can of course be used alone, but are innovative filters that can also be connected to build a filtering system that suits differing tank conditions.

- **System Filter 1A** [see p24]
Categorized into 4 types, depending on which Power House Type (Soft or Hard) is used and capacity (0.50 l /0.45 qt. or 0.25 l /0.23 qt.).
 1. 1A 0.25 Soft Type
 2. 1A 0.50 Soft Type
 3. 1A 0.25 Hard Type
 4. 1A 0.50 Hard Type

- **System Filter 2A** [see p26]
Fits 0.50 l /0.45qt. of Power House, and is categorized into 2 by type (Soft or Hard) as shown below.
 1. 2A 0.50 Soft Type
 2. 2A 0.50 Hard Type



Features of the System Filter

The System Filter brings out performance of the contained Power House to its fullest, sustaining highly efficient filtering ability, and enabling good maintenance and ease of use, thus making it a high-grade submersible filter that offers various superb features as explained below.

- **Filter maintenance** requires attentive care so as not to kill or spill the beneficial bacteria that have settled. With the System Filter, all you need to do to clean it, is remove the sponge, rinse with aquarium water in gentle shaking motion 2 or 3 times, then let that water out.



■ Easy cleaning process - shake the body gently, then let the water out.

Optional Parts for the System Filter

System Sponge 1	System Sponge 2	Water Inlet Funnel	Connector Set	Power House Hard Type	Power House Soft Type
				0.25 l /0.23 qt. 0.50 l /0.45 qt.	0.25 l /0.23 qt. 0.50 l /0.45 qt.

● Stream Head

There are 2 types to accommodate conditions of where in the tank the filter is placed. Stream Head powerfully spreads air bubbles and water current.

Stream Head 1: Spreads in one direction



Stream Head 2: Spreads in all directions

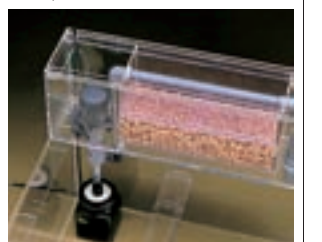


- **Hose Adaptor** (accessory)
Adjoining part for when using as a pre-filter. Place in exchange with the center pipe. Can be connected to hoses of 12 mm (0.47 in.) or 16 mm (0.63 in.) bore diameter, and is to be connected to the main filter.

■ Example of Hose Adaptor attached to 1A 0.25 Soft Type



Example of connection to a hood filter



Example of connection to an external filter



Power House Soft Type M Size

Power House Hard Type M Size

■ [Left] 1A 0.50 Soft Type
■ [Right] 1A 0.25 Hard Type
The actual bodies of both these products are dark green in color as a measure against moss.



Superb filtering power hidden within a simple body.
Individual use as a pre-filter...
Paving way to the next era in the aquarium world.

Power House System Filter 1A

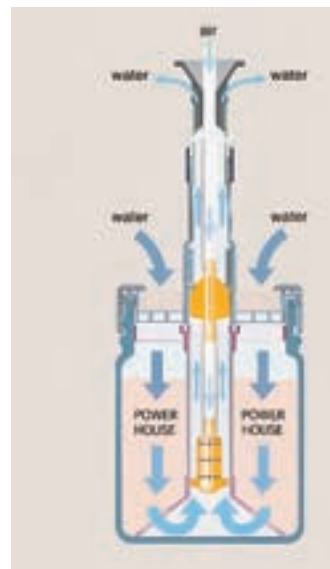
The inner tube at its center takes in air, and the System Air Driver at the bottom powerfully blows out uniform bubbles, making for a simple air-lift structure that creates water current and supplies oxygen.

The powerful water current circulates breeding water, the System Sponge conducts physical filtration and high-performance filtering media Power House conducts biofiltration and pH control, exhibiting superb filtering power.

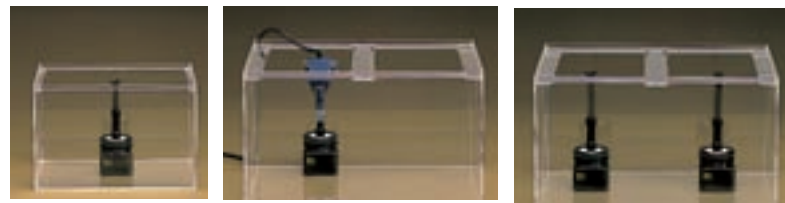
● 1A 0.50 Soft Type



[Diagram on right-hand page]
Cross-section and structure of System Filter 1A
Air sent into the inner tube, blows air bubbles powerfully out of the System Air Driver at the bottom, creating strong, upward water currents and takes breeding water into the filter.
The water that is sucked in passes through System Sponge 1 and high-performance filtering media Power House, becoming transformed into fresh water!!
Then it is blown out of the Stream Head, spreading throughout the tank and circulating as comfortable breeding water.



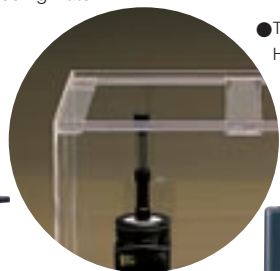
[Right] ● 2 units of System Filter 1A 0.25 Hard Type set in parallel, inside an aquarium for Asian arowana.



● Tank set with 1A 0.25 Hard Type
● Combined use of 1A 0.25 Hard Type and submersible pump
● Combined use of 1A 0.25 Hard and Soft Types

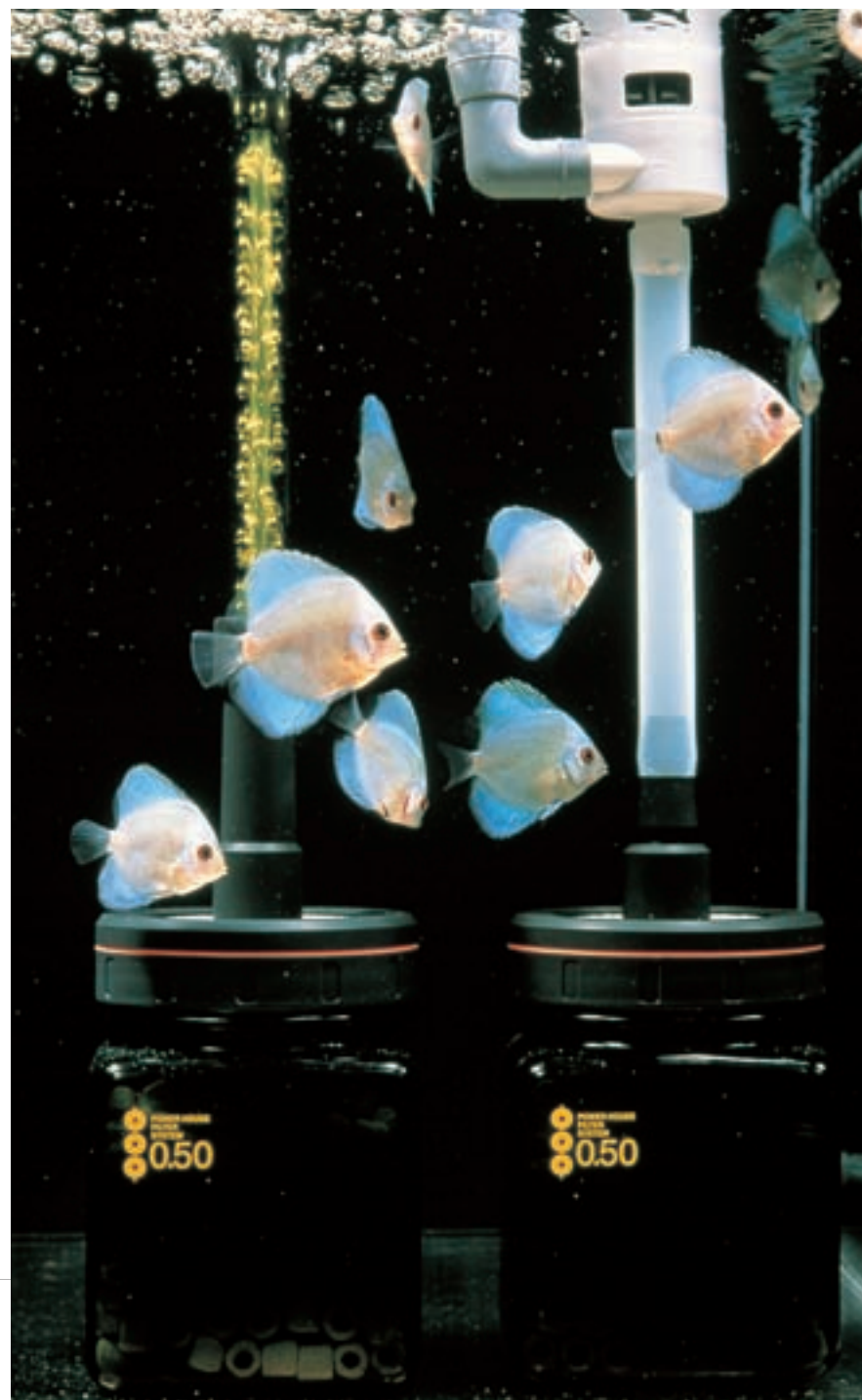


● Aquarium with a layout of a total of 30 characin and waterweed and driftwood. the center of the tank. (Aquarium size: 600 X 300 X 360mm/23.6 X 11.8 X 14.2 in.)
otocinclus combined, with 2 units of System Filter Soft Type (Aquarium size: 600 X 300 X 360mm/23.6 X 11.8 X 14.2 in.)



● Tank set with 1A 0.50 Hard Type

● Example of 1 unit added on to upgrade a hood filter (right side of photo), plus further addition of another unit.



● 2 units of System Filter 1A 0.50 Soft Type set in parallel, inside an aquarium for blue diamond discus (juvenile).



Example of 1A added to upgrade filtering power.



[Upper Photo]
● Upgrading an external filter (filled with Power House Soft Type M Size), with added use of System Filter 1A 0.25 Soft Type.
[Lower Photo]
● Upgrading a hood filter (filled with Power House Soft Type M Size), with added use of System Filter 1A 0.50 Soft Type.

Power House System Filter 1A 0.25 Hard Type – standard issue (With Stream Head 2 attached)

Power House System Filter 1A 0.25 Soft Type – standard issue (With Stream Head 1 attached)

Power House System Filter 1A 0.50 Hard Type – standard issue (With Stream Head 2 attached)

Power House System Filter 1A 0.50 Soft Type – standard issue (With Stream Head 1 attached)



System structure that enables the water set up of a pro. We make aquarium a hobby that's more approachable and fun.

Power House System Filter 2A

This product is designed with systematic use joined to 1A in mind, as [connectable submersible filters], and is on par with 1A in exhibiting superb filtering power.

2A can of course be used alone, but by building a system connecting to either 1A or to another 2A, it enables you to easily create high-grade aquarium water like the pros, making the aquarium hobby enjoyable in a more approachable manner.



●2A 0.50 Soft Type and 1A 0.50 Soft Type connected

■Tank Size and Guideline on Number of Filters to Use

W X D X H (cm/in.)	#
45 X 30 X 30 cm 17.7 X 11.8 X 11.8 in.	1 unit
60 X 30 X 36 cm 23.6 X 11.8 X 14.2 in.	1 unit
60 X 45 X 45 cm 23.6 X 17.7 X 17.7 in.	2 units
90 X 45 X 45 cm 35.4 X 17.7 X 17.7 in.	2 units

(In case of freshwater fish / same for both 1A and 2A)

12 juvenile altum angelfish bred in a tank of 600 X 450 X 450 mm (23.6 X 17.7 X 17.7 in.) size. 2 sets of Soft Type 1A and 2A connected. Considering aquarium size, this set up is a little extravagant. However, as altum angelfish are particular about water quality, and with the future in mind when they grow and need to be placed in a larger tank, we decided to go with overly good water quality in this case. With maintenance in mind, Stream Head 1 which creates currents in one direction is set towards the back of the aquarium, causing feces, etc. to gather towards the front of the aquarium. Each morning, feces is sucked out and the same amount of water taken out during that process is replaced (approx. 1 bucketful). Frozen red worms used for food; water temperature kept at 28°C (82.4°F); pH level kept at between 6.5 to 7.0.

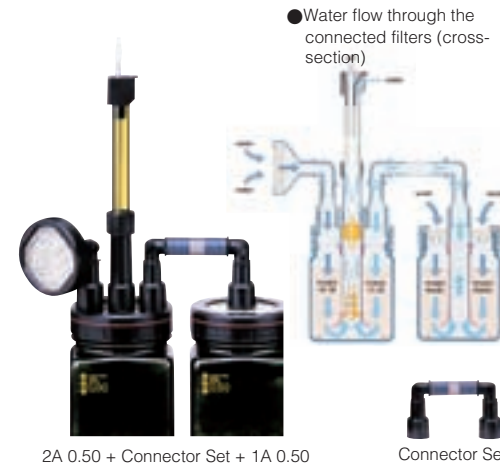


15 juvenile gold ocellatus bred in a tank size of 600 X 300 X 360 mm (23.6 X 11.8 X 14.2 in.). Hard Type 1A + 2A connected and placed in the center of the tank. Instead of using coral sand, rocks and shells are used for reason of maintenance. Amount of Power House used becomes 1 ℓ (0.9qt.) by connecting the 2 System Filters, which is a little under 2% in water volume ratio, making for pH level of approximately 7.5. This is slightly low, but is safer than using coral sand or adjusters to force pH rise and shocking the fish when water is changed.

Examples of System Building

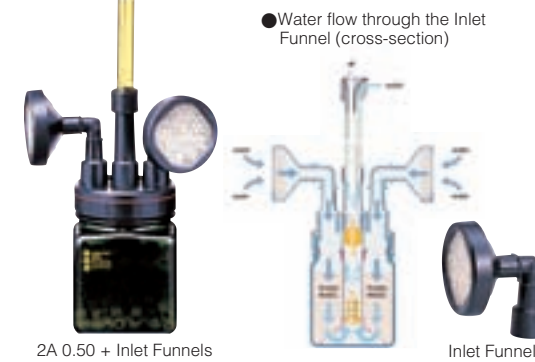
Connector Specifications

Use the Connector Set to connect 2A and 1A or 2A and 2A, to build a filtering system that doubles filtering power. This enables enhanced filtering capability using just 1 air pump.



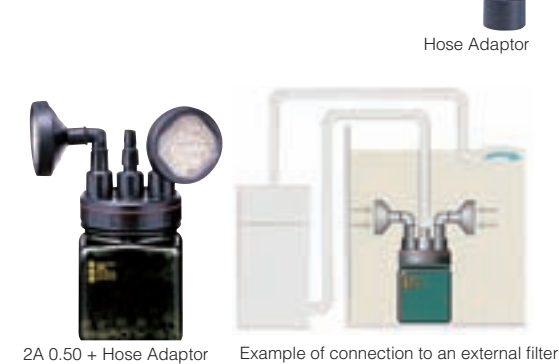
Inlet Funnel Specifications

By using 2 Inlet Funnels which conduct physical filtration, this system significantly raises filtering capability.



Pre-filter Specifications

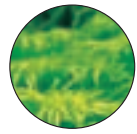
Exchange the center pipe with the Hose Adaptor, and connect to external or hood filter, to set up a system with a pre-filter function. Such usage boosts filtering power and reduces burden on the main filter.



●Example of usage with optional part, Inlet Funnels



2A Hard Type - standard issue / With Stream Head 2 attached 2A Soft Type - standard issue / With Stream Head 1 attached



Compact yet full-fledged filter apparatus.
The stylish submersible filter with a ceramic body.

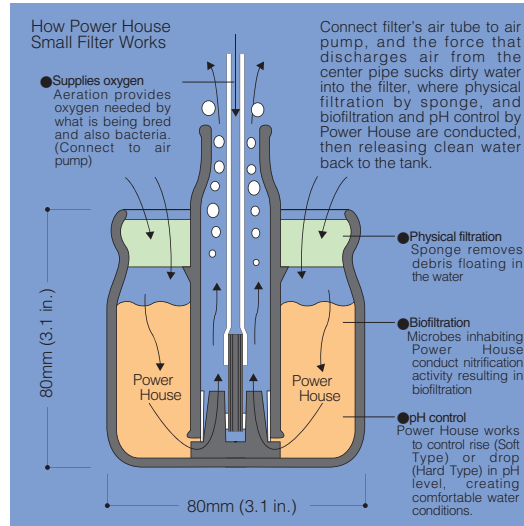
Power House Small Filter

Want to be particular about the water, but enjoy your aquarium without too much fuss? The Small Filter was developed with such aquarists in mind.

A system that fully brings out the features of high-performance Power House filtering media, is all contained within the small and stylish ceramic body.

Should moss grow on the ceramic body, it can simply be wiped off, returning to its original beautiful appearance. To make this product as durable as possible, the air tube and gasket are made of 100% silicon and the Air Driver (air discharge spout) made of ceramic, so although compact, you can feel secure about using this filter over the long term.

It is suited for use as main filter for a small tank (45 cm/17.7 in. and under), or as sub-filter for a medium-sized tank (approx. 60 cm/23.6 in.). The Small Filter is perfect for people who wish to use a high-grade product conveniently and over long periods of time.



■ **Air Tube**
 Made of 100% silicon, will not harden and will remain flexible even when immersed in water over the long term.

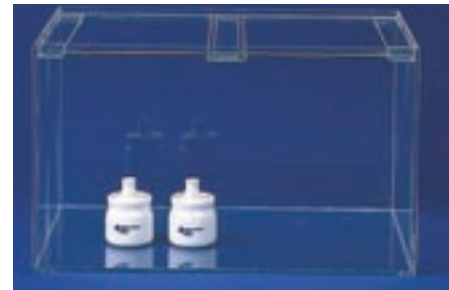


■ **Power House Small Filter Hard Type**

To raise beautiful and nicely shaped discus and guppy in an aquarium, managing the quality of breeding water becomes a key point. The "Small Filter Hard Type" controls drop in pH level, creating breeding water suited to fish and as a result, making it possible to breed nicely shaped fish.



● 2 units of Small Filter Hard Type placed in a 60 cm (23.6 in.) tank



● Small Filter Soft Type placed in a 45 cm (17.7 in.) tank



■ **Power House Small Filter Soft Type**

To enjoy the beautiful colors of apisto and small characin, creating suitable water is the first important step. The "Small Filter Soft Type" controls rise in pH level, making it the ideal filter for creating "slightly-acid soft water" that apisto and small characin prefer, and maintains that comfortable environment over long periods of time, helping to enhance your aquarium.





Cover Photo: SS Grade Crystal Red Shrimp
Using external filter, Power House Soft Type M Size and MicroHouse Kit
(Photo courtesy of Munechika Fish Farm: <http://www.mff.jp/>)

Clion Co., Ltd. PH Products

2035 Shimoi, Shimoi-cho, Owariasahi-shi, Aichi-ken 488-0052 JAPAN

Tel: +81-561-52-8901 Fax: +81-561-52-8925

Website: <http://www.ph-clion.com>

E-mail: ph@em.clion.co.jp