

Hydro Wizard® ECM 42



Operating manual



PANTARHEI
Natural Aquarium Technology



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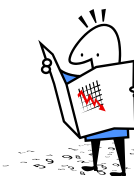
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Thank you very much for choosing this product! The Hydro Wizard® ensures the exact simulation of natural movements in the aquaculture and in public aquaria. What is special about the Hydro Wizard® compared to other products is that a laminar flow – and not a turbulent flow is produced by the Hydro Wizard®. A turbulent flow is not good for the fish. As a result of the exact calculation of all components in the flow simulation, the Hydro Wizard® is unrivalled until today within the area of efficiency and the environmentally friendly scope of services.

Before the first commissioning, please read this operating manual carefully – for your own safety, the safety of others and your animals. Store this manual in a safe place, so that you can access the information at any time.



1) Scope of delivery

Hydro Wizard® ECM 42

Controller unit

Power supply

Cable

Magnet holder

Operating manual

2) 2) Safety guidelines

a) General safety guidelines

Only connect the device in aquaria, garden ponds and in their protection zones to an electrical outlet with residual current device (earth leakage circuit breaker) with a rated current of not more than 30 mA an (DIN VDE 0100). If you have any questions concerning this, please contact an electrically skilled person. If persons are in the tanks or ponds, the pump must not be operated.



Before installation and commissioning, please observe the following instructions:

- The electrical connection is made to a safety socket outlet with a mains voltage of 100-240 V~ 50/60 Hz; fuse at least 10 A.
- Only use in closed rooms for aquarist applications!





- The controller unit and the power supply unit must not come into contact with water.



- In case of visible damage to the cables, the drive must not be operated. Do not attempt to repair the cable yourself.
- Do not use the cable for carrying or pulling the drive. The cable must not be used for mounting the drive.
- The motor unit must only be operated underwater. Dry running will destroy the bearings. In the event of non-compliance, warranty and liability claims will expire.
- This device is not intended to be used by persons (including children) with reduced physical, sensory or mental capabilities or a lack of experience and/or knowledge – unless these persons are supervised by a person responsible for their safety or they receive instructions by this person on how to use the device.



- The operator is responsible for the compliance of local safety regulations.
- Within the working area, the user is liable to third parties for damages caused by the use of the device.
- The pump is exclusively suitable for pumping seawater and freshwater. Pumping corrosive, flammable or explosive liquids is not permitted. The temperature of the pumped liquid must not exceed 35 °C.
- The working temperature of the device is between 5 °C and 35 °C.



- Do not work with a device that is damaged, incomplete or modified (without the permission of the manufacturer). Before commissioning, ensure by an expert that the required electrical protective measures are available.
- Please read the instructions in the operating manual concerning the topic “Maintenance and cleaning”. All measures beyond this, opening the pump and the switchboards in particular, are not permitted. Always contact the manufacturer in the event of repair.



b) Protection against electric shock



After setting up the pump, the mains plug must be freely accessible at any time during the operation.



Before commissioning your new pump, have an expert checked whether the:

- Grounding, protective multiple earthing and residual current-operated protective circuit work properly following the latest safety regulations***
- Electrical plug connections are kept dry***

- Do not use the cables to remove the plug from the socket. Protect the cables against heat, oil and sharp edges. Do not bend the cables.
- Protect the cable and the electrical connections against humidity. Make sure that the cable and the electrical connections are in an area that cannot be flooded.
- When working on the device, remove the mains plug from the socket.
- The minimum immersion depth depends on the set pumping capacity.
- The maximum operating depth is limited by the cable length.



3) Safety guidelines for dealing with the magnet

- The enclosed magnets are much stronger than for example pin board magnets.
- Keep the magnets away from objects, which react sensitively to magnetism (e.g. credit cards and EC cards, computers). There is the danger of irreparable damage. Maintain a safe distance of at least 75 cm.
- The enclosed neodymium magnets may cause crushing injuries on fingers and other extremities due to their enormous force. Never take your hands, ferrous materials or other magnets between the magnets.
- Keep the magnets away from pacemakers!
- As a result of the high magnetic force, surrounding objects (e.g. knives) may be attracted in an uncontrolled manner.
- Never put the holding magnet in direct contact with the magnets on the “Hydro Wizard® housing”. The magnets move towards each other in such a strong way that the collision can hardly be controlled. Always keep the “Hydro Wizard® housing” and the magnet support separately.





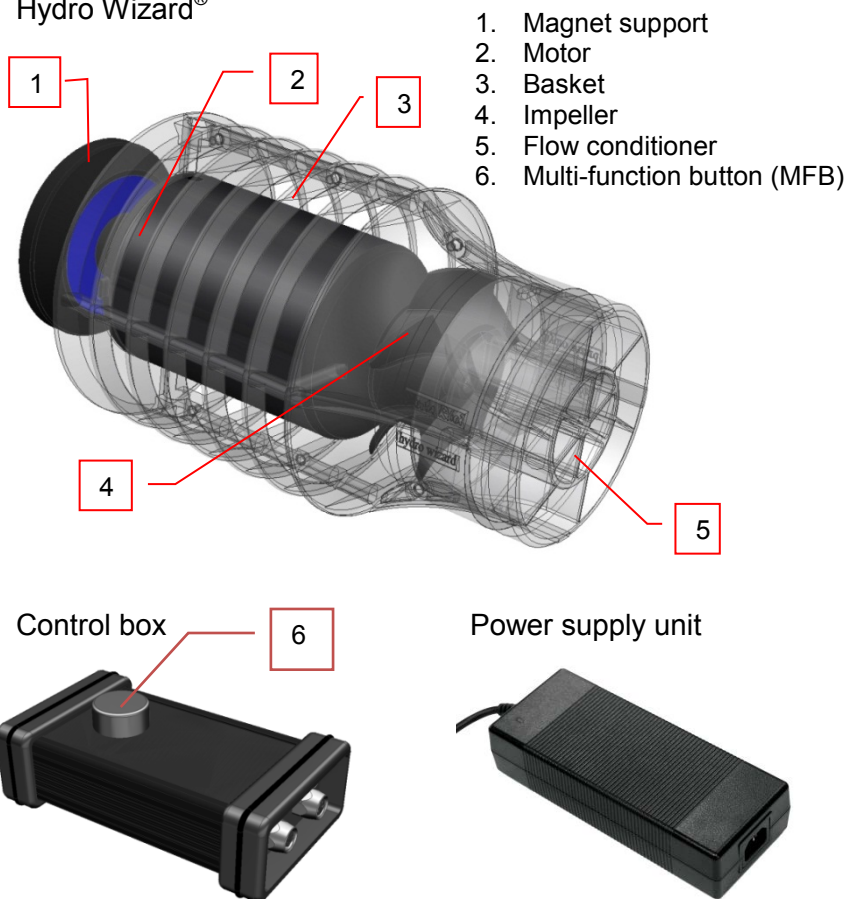
4) Intended use and scope of application

The Hydro Wizard® is used to generate laminar flows in aquaria, ponds and similar waters. Energy-efficient circulating of water is a basic function in this connection. „Dead zones“ can thus be avoided. With the help of the optionally available USB interface, wave simulations can be driven via a connected PC. Thereby, wave height and wave length can be adjusted. This is used to simulate courses of rivers, tides and breakers. The Hydro Wizard® is designed for use in freshwater and seawater.



5) General description

Hydro Wizard®



a) Functional description

By rotation of the impeller, an area of low pressure is generated which sucks in the medium from behind through the fins of the basket and – past the flow conditioner – ejects it again at the front.



6) Commissioning

a) Checks before commissioning

- Is there a ground fault circuit interrupter connected upstream of the device?
- Are all cables free from damage? Cables must neither be bend nor rolled up!
- Is the flow conditioner? The flow conditioner serves as finger protection. The device must never be operated without finger protection!
- Are there any objects in the drive that may block the impeller?
- Are still people in the tank?
- Make sure that the mains plug was disconnected before installing the drive in the tank.

b) Installation of the pump

1. Installation step:

- Attach the pump to the inside of the pane – please exclusively on the intended points of attachment of the pump.

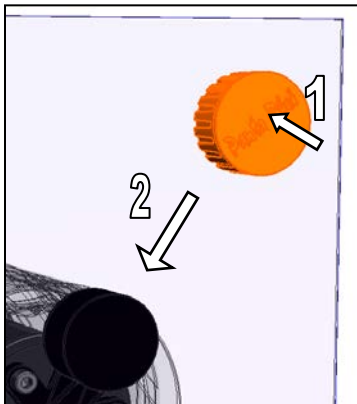


In order to do so, use either the enclosed magnet support or the threaded hole M5, on which the magnet support is assembled. The dimensions can be found in the dimension drawing on page 24.



2. Installation step:

- In order to fix the pump, take the small magnet and attach it to outside of the pane – on the



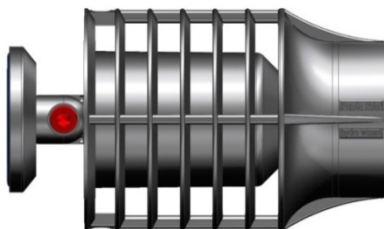
point where it meets the magnet support of the inside of the pane. For attaching the outer magnet, we recommend you to put the magnet far away from the magnet support on the pane (1) and then slide it carefully towards the magnet support (2).

Important notes:

- Putting the magnet directly on the magnet support may lead to crushing of the hand and may possibly damage the tank! Furthermore, the outer single magnets are not intended for use in water. Water may penetrate, which leads to the corrosion (rusting) of the magnets.
- Appropriate mounting material can be purchased directly from Panta Rhei. Information on this can be found on page 26 of this operating manual. The dimensions can be found in the dimension drawing on page 24. The Hydro Wizard® itself generates very high axial forces. In addition, there are the inertia forces of the moving water masses in the tank. If you do not use Panta Rhei equipment for mounting, please pay attention that the support, on which the Hydro Wizard® is assembled, can safely absorb a force of approx. 20 N.



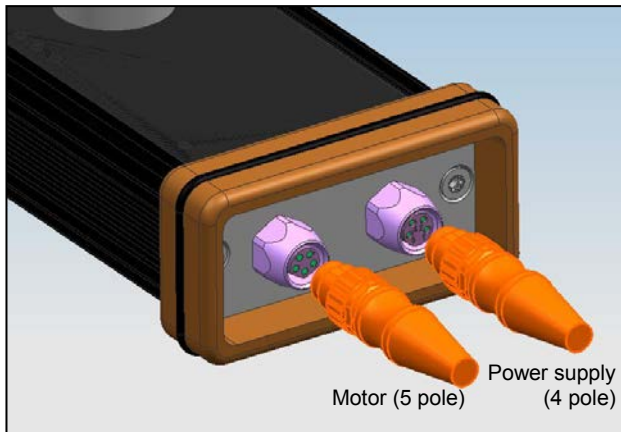
- During operation, the pump must be completely immersed into water. The drive should be assembled in such a depth below the water surface that no air is sucked in from the surface during operation. Please pay attention that the height of the water level is changing during wave simulation.
- The drive can be directly assembled via a solid ground in the tank. In case of a sandy ground, a vacuum effect may be the result. In order to avoid that, increase the distance to the ground. Objects sucked in may emerge from the flow conditioner at high speed and cause damage.
- It must be ensured that the intake basket is not covered by plants and similar objects.
- The cable must be protected against animals which are able to damage the cable.
- It is advisable to remove, from the inside, algae and biofilms from the aquarium pane on the point, where the Hydro Wizard® is to attached, in order to ensure better grip.
- By loosening the cylinder screw on the magnetic base, the angle adjustment of the Hydro Wizard® can be changed and subsequently be fixed again.





3. Installation step:

- Now connect the plug of the pump (5-pole) and the plug of the power supply unit (4-pole) with the control box on the On-side. Insertion requires some sensitivity.



- Now connect the power cable with the power supply unit and subsequently with a socket.
- Then place the multi-function button to the ON-field of the control box.

Important note:

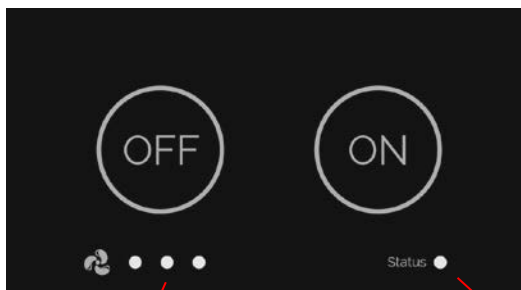
- When switching on for the first time, the speed of the drive should be increased slowly by turning the multi-function slowly to the right and, while doing so, observing the flow effects in the tank. Is something sucked in or are decorative items or plants blown away? If this is the case, choose a different location of the pump or reduce the performance.



c) Operation of the control

The control of the Hydro Wizard® is operated by the multi-function button on the control box. It is used for both switching on the drive and speed regulation.

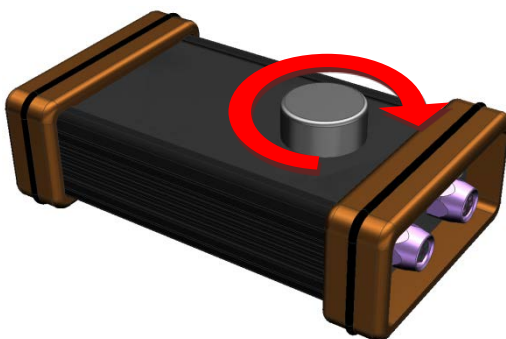
The multi-function button is kept on the control box magnetically. It can be positioned on two positions on the housing. Position ON or position OFF.



Speed indication

Display On/Off

Is the multi-function button is on the position ON (status indicator at the lower right lights up), the flow velocity of the pump can be changed here by turning the button. Here, the speed is displayed at the lower left by LEDs (see also table on page 14).





As standard, the Hydro Wizard® is after connecting to the power supply in the stop!



*If the multi-function button is removed from the control box, the control box retains the last setting.
In order to switch off the Hydro Wizard®, just switch the multi-function button to OFF*

Status display	%	Speed 1/min	Volume flow l/min
○ ○ ○	0	0	0
● ○ ○	1 - 19	400 - 999	113,760 – 284,400
● ● ○	20 - 39	1,000 – 1,399	284,400 – 398,160
● ● ●	40 - 59	1,400 – 1,799	398,160 – 511,920
● ● ●	60 - 79	1,800 – 2,099	511,920 – 597,240
● ● ●	80 - 99	2,100 – 2,350	597,240 – 668,400
● ● ●	100	2,350	668,400



7) Cleaning function

The cleaning function is an inherent part of the control.

For this, the Hydro Wizard® is operated every hour for two seconds in the opposite pumping direction.

Attention: The cleaning function does not replace regular maintenance and cleaning!



The cleaning function is used, e.g. to remove parts of aquatic plants that are entangled in the Hydro Wizard®.

An individualisation of the break times is possible via an optionally available software and USB interface.

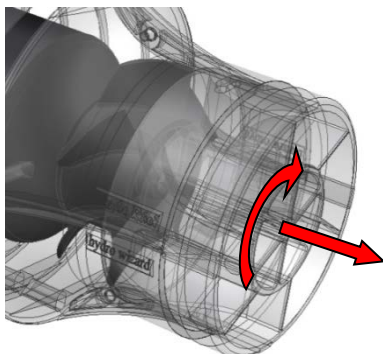
(See „Optional accessories“, page 26)



8) Assembly and disassembly



When carrying out assembly and disassembly, always disconnect the mains plug in advance!



The conditioner is mounted to the basket by means of a bayonet lock. It can be pulled out to the front after turning in clockwise direction.



In order to replace the impeller, you require a Torx screwdriver T6.

In order to do so, hold the impeller with your hand and loosen the screw counter-clockwise (Tightening torque

max. 60 Ncm).



9) Maintenance and cleaning

The Hydro Wizard® is almost maintenance-free. If there is a higher current consumption over time, lime has probably deposited in the sliding bearings.

Depending on the water composition, a more or less strong deposit is to be expected.

For cleaning, the sliding bearings must be flushed with vinegar concentrate.

- For this purpose, mix 500 ml vinegar concentrate with ten litres of water in a suitable container.
- Immerse the drive completely in the liquid.
- Regulate the performance of the pump in such a way that a point flashes in green on the display.
- Run the drive for one hour.
- Replace the cleaning mixture by ten litres of clear water and run the motor again for one hour.

This measure should be carried out at least once a year for reasons of precaution. Check the condition of the cables regularly. They might be damaged by friction or animals.

a) General cleaning work

Remove plant remains and other residues, which have deposited onto the basket, at least once a week (or more often, if necessary). Sediment depositions may be removed from the housing using a soft brush.

Do not clean the drive or parts of it in the dishwasher. The parts are not dishwasher-proof!





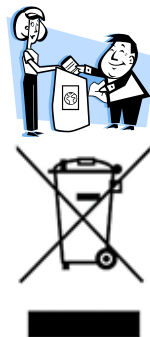
10) Troubleshooting

Problem	Possible reason	Solution
Pump does not start	No electrical power	- Plug in the mains plug - Check the fuses
	Speed regulation of the control is set to "0"	Read the operating manual of the control
	The impeller is blocked	- Disconnect the drive from the mains - Remove the block
	Motor plug is not inserted	Connect the motor to the control box
	After a power failure, the speed is set to "zero"	Up-regulate the speed again
Pump stops suddenly	The impeller is blocked	- Disconnect the drive from the mains - Remove the block
	Power failure	Check the home fuse
	After a power failure, the speed is set to "zero"	Up-regulate the speed again
The motor does no longer generate a flow	The inlet basket is contaminated	Clean the inlet basket
Strong noise development	A wing of the impeller may be broken off	Disconnect the drive from the mains and replace the impeller



11) Disposal and environmental protection

The device must not be added to the normal household waste, but must be disposed of professionally. For this purpose, please contact your local disposer. [DIRECTIVE 2002/96/EC].





12) Warranty

a) Extent of warranty

This limited warranty is applicable from the date of purchase for all new products from Panta Rhei GmbH purchased for your own normal use and not for reselling. Panta Rhei GmbH guarantees that a product covered by this warranty, apart from the exceptions listed below, is free from material and manufacturing defects.

b) Warranty period

The warranty period is limited to two (2) years and starting from the date of purchase. The exact warranty period depends on when and where the product was purchased. A valid purchase receipt is required to prove a warranty entitlement.

c) Warranty exclusions

The following are not covered by this warranty: use for other than the intended purpose, accidents or changes to the hardware or software, unauthorized modifications, an unsuitable physical or operational environment which does not meet the product specifications, inexperienced maintenance or defects caused by a product for which Panta Rhei GmbH is not responsible. There is no warranty entitlement for products whose nameplate has been removed or modified. Panta Rhei GmbH offers no other guarantees whatsoever, including, but not limited to, implied agreements of conditions relating to the merchantability or suitability for a particular purpose. In some jurisdictions a restriction of implied agreements is not admissible so this restriction may not be applicable to you. Panta Rhei GmbH is not

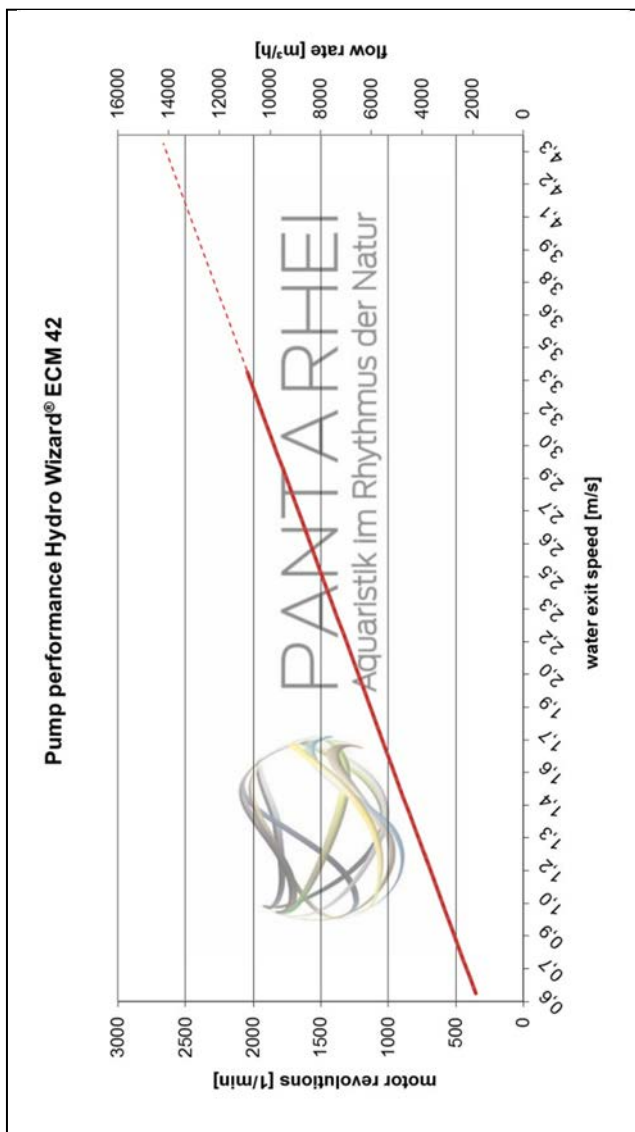


obliged to replace products which are not covered
by this limited warranty.



13) Technical data

a) Pump characteristic curve



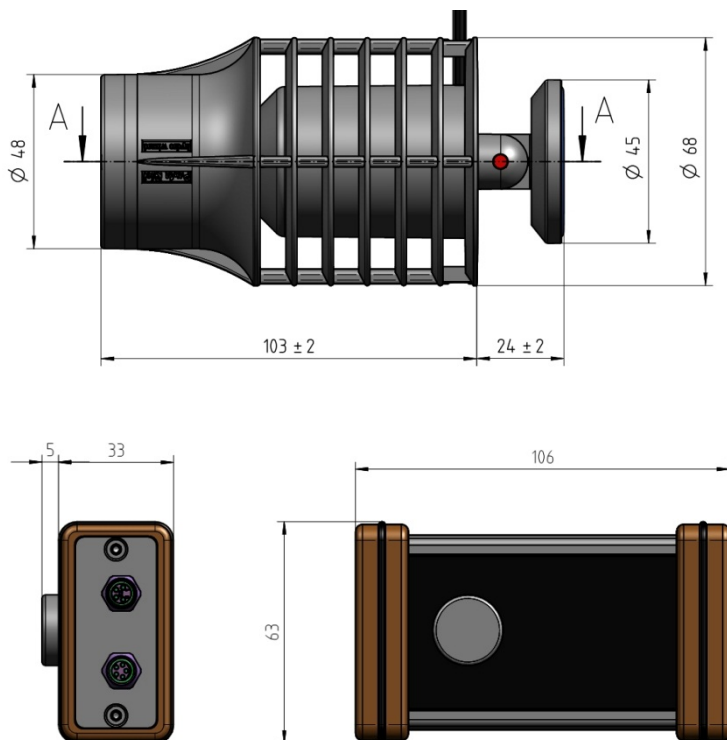
**b) Drive data****Type****Hydro Wizard® ECM 42**

Rated input voltage	100-240 V~, 50/60Hz
max. power consumption	33 W
min. speed	400 rpm
max. speed	2,350 rpm
max. flow rate	11,280 l/h
max. medium velocity	3.3 m/s
Axial thrust	~5.5 N
max. operating depth	conditioned by cable length
Weight (motor + basket)	408 g
Total weight	1,026 g
max. medium temperature	35 °C
max. ambient temperature	40 °C



c) Dimensions

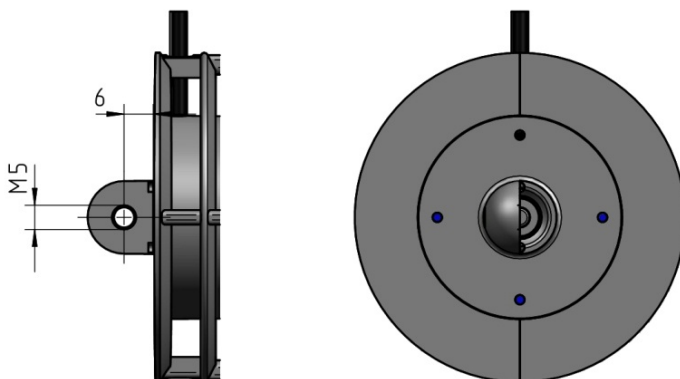
All dimensions are in mm:





d) Connecting dimensions

The bore holes in the rear side of the Hydro Wizard® must not be covered!





14) Optional accessories

- 3-point magnet support (Order no. 428229)
- (Mounting-)Adapter (Order no. 11054006)
- Single magnet (Order no. 428230)
- Sponge-filter attachment (Order no. 11053026b)
- USB adapter set (Order no. 11054197)

For further information, please contact our field workers or get yourself informed at:

<http://shop.panta-rhei-aquatics.com>



15) Spare parts

You receive all spare parts for the Hydro Wizard® directly at Panta Rhei.

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<http://shop.panta-rhei-aquatics.com>







Hydro Wizard® ECM 42

A product of



PANTARHEI
Natural Aquarium Technology

www.panta-rhei-aquatics.de