

Water Aerators



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Water Aerators

Overview

Water aerators or pond aerators act as overwater aerators or underwater aerators especially for the exchange of dissolved gases (oxygen, carbon dioxide, nitrogen) in the water. They can be grouped in aerators which are operated with electric energy (injector aerator, propeller aerator, paddlewheel aerator), or diffusers which are operated with pressurized gas (air or oxygen). Beside the creation of current velocity and the turnover of water volume, most important is the fine and evenly distribution of the hauled medium (water or gas).

Propeller aerators draw water into the air and produce an un-directional current, but just around the aerator itself. Propeller aerators are available with overwater motor or with underwater motor, but only the last one can also be used in winter to deduce the formation of ice cover. Sometimes, also water conveyers are mounted, to draw water from the depth to the water surface.

Paddlewheel aerators splash water into the air and produce a directional current, but only on the water surface. Paddlewheel aerators are only available with on overwater motor, but cannot be used in winter during ice formation, as the paddles could be break off on ice plates.

Injector aerators suck air into the water and distribute it in fine bubbles. Depending on submerged depth and angle of the injector, the air suction and current direction can be changed. Injector aerators are available with overwater motor or underwater motor, but only the last one can create a horizontal current. However, both can be used in winter to reduce the formation of ice.

Diffuser disperse gas (air or oxygen) into the water and are made from different material (textile diffusers, rubber diffuser, ceramic diffuser). Air diffusers can be used well in winter to reduce the formation of ice in ponds, but also to lift water from the depth (hydrodynamic pump resp. mammoth pump).

The oxygen introduction rate in all water aerators (injector aerators, propeller aerators, paddlewheel aerators) is about 1.2-1.5 kg O₂/kW/h under standard conditions (starting value: 0 mg O₂/l) resp. 0.4-0.5 kg O₂/kW/h under practical conditions (starting value: 6 mg O₂/l). In air diffusers, this values are at coarse bubbles 0.6-1.2 resp. 0.12-0.25 kg, at medium bubbles 1.0-1.6 resp. 0.20-0.35 kg, and at fine bubbles 1.2-2.0 resp. 0.25-0.42 kg O₂/kW/h. With oxygen diffusers or oxygenation systems where pure oxygen (approx. 95 % O₂) instead air (approx. 21 % O₂) is used, the oxygen introduction rates are about 5-times the values with air.

Consulting:

AquaTech

A-6370 Kitzbühel/Austria, Unterbrunnweg 3, Tel: +43/664-1048297, www.aqua-tech.eu

Water Aerators

Selection

Propeller Aerators



With
Overwater motor (left)
Underwater motor (right)



Paddlewheel Aerators



With
T-float (left)
H-float (right)



Injector Aerators



With
Protection fingers (left)
Protection frame (right)



Quality for reasonable prices!

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Water Aerators

Specifications

Aerator	Propeller Aerators				Injector Aerators			
	PB-370	PB-750	PS-370	PS-750	F7-220	F7-380	IB-220	IB-380
Motor	Overwater		Underwater		Underwater		Underwater	
Casing	Cast steel		Cast steel		Cast steel		Stainless steel	
Power (kW)	0,37	0,75	0,37	0,75	0,37	0,75	0,75	1,20
Connection (V)*	230/400		230/400		230	400	230	400
Rotation speed ^x	1400		1400		2800		2800	
Turnover (m ³ /h)	100	180	120	190	100	200	200	300
Propeller wings	4		4		3		3	
Float shape	□		□		H		H	
Size LxW (cm)	70x70		70x70		100x50		100x60	
Weight (kg)	28	30	24	25	22	24	21	23
Transport	Pallet		Parcels		Parcels		Parcels	
Delivery	Ready to Use		Assembly Kit		Assembly Kit		Assembly Kit	
Options	Basket		Conveyer	Stronger	Stronger		Stronger	
Accessory	Cable + Plug		Plug		Cable		Cable	

*Electricity (AC): 230 (220-240) V/50 Hz or 400 (380-420) V/50 Hz.

^xRotation speed (RPM): Rounds per minute.

Aerator	Paddlewheel Aerators							
	ST-250	ST-370	ST-750	ST-1500	SH-500	SH-750	SH-1500	SH-2200
Motor	Overwater				Overwater			
Casing	Cast steel				Cast steel			
Power (kW)	0,18	0,25	0,37	0,75	0,50	0,75	1,50	2,20
Connection (V)*	230/400				230/400		400	
Rotation speed ^x	140				140			100
Working zone (m)	20	33	50	100	70	100	200	300
Paddle wheels	2				2		4	6
Float shape	T				H		I-I-I	
Size LxW (cm)	150x140				160x120		180x210	180x270
Weight (kg)	20	25	30	40	80		100	120
Transport	Pallet				Pallet			
Delivery	Ready to Use				Assembly Kit			
Options	Non		Oxygen cover		Stronger/Larger			
Accessory	Cable + Plug				Cable + Plug			

*Electricity (AC): 230 (220-240) V/50 Hz or 400 (380-420) V/50 Hz.

^xRotation speed (RPM): Rounds per minute.

If questions, please contact:

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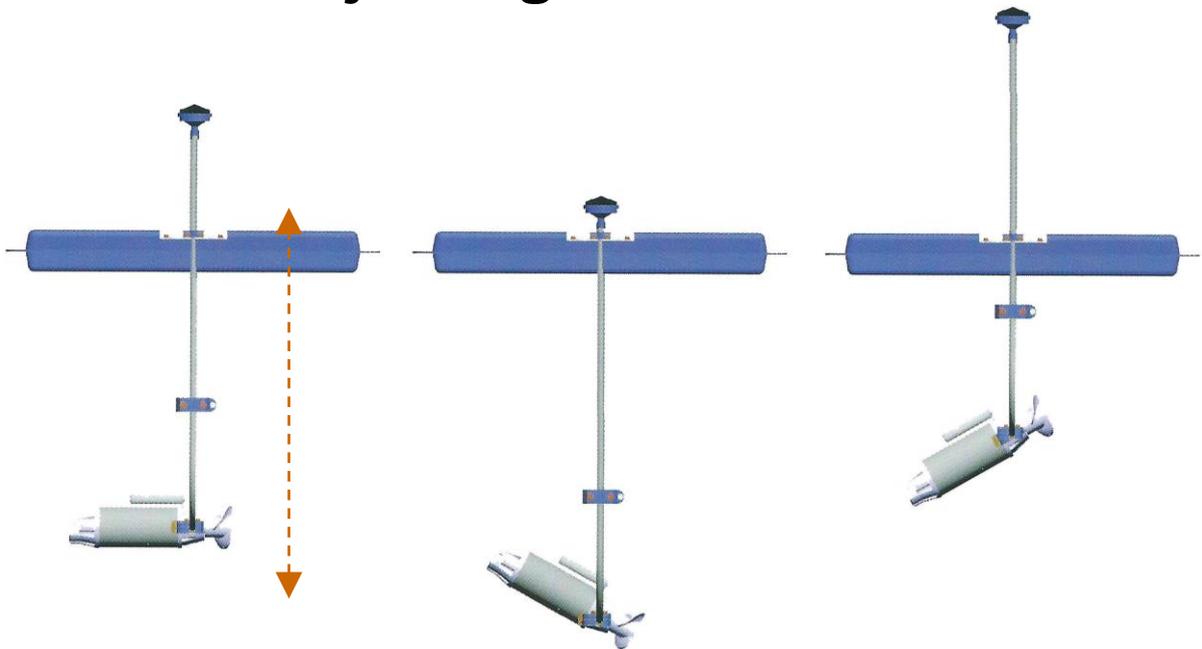
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Injector Aerators

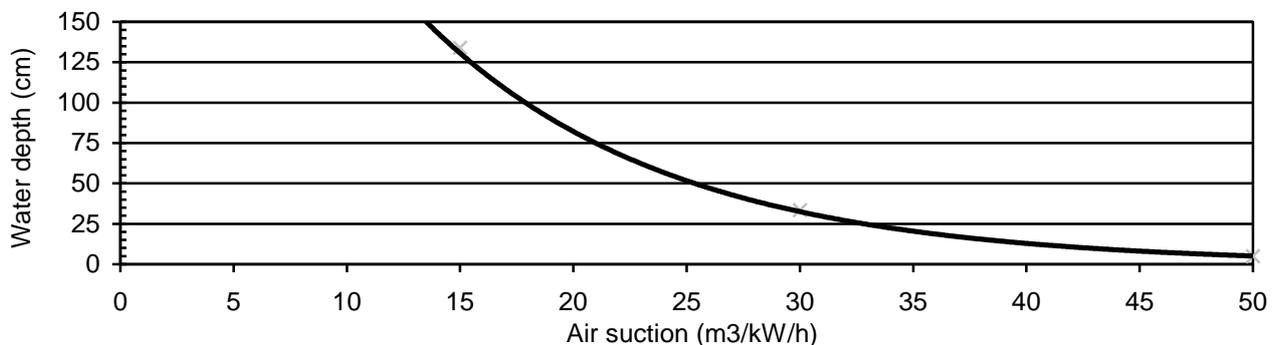
Selection Criteria

Nominal power	Air suction	Waster turnover	Pond size	Fish stock
0,37 kW	to 15 m ³ /h	approx. 100 m ³ /h	to 0,5 ha	max. 1,5 t
0,75 kW	to 30 m ³ /h	approx. 200 m ³ /h	to 1,0 ha	max. 3,0 t
1,20 kW	to 45 m ³ /h	approx. 300 m ³ /h	to 1,5 ha	max. 4,5 t
1,50 kW	to 60 m ³ /h	approx. 400 m ³ /h	to 2,0 ha	max. 6,0 t

Adjusting Possibilities



Introduction Rate



Best value for money!

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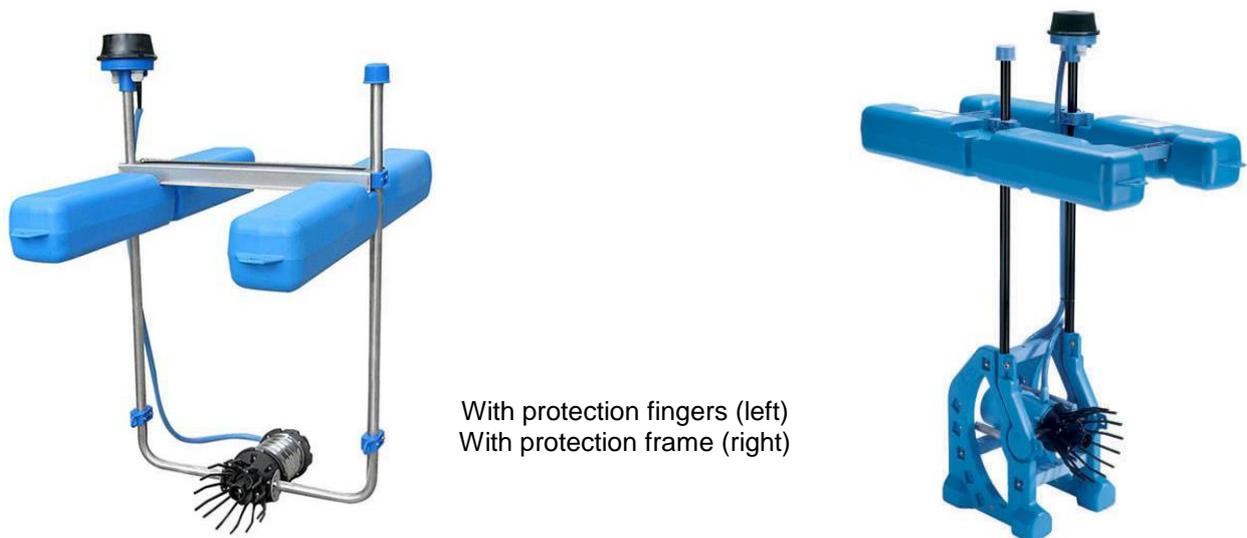
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Injector Aerators

with

Underwater Motor

This injection aerators are one of the best and most advanced aeration system worldwide, and also suitable for large ponds. They work with an, for endurance run produced, maintenance free, adjustable, submerged motor, available in different power ratings (0.37-1.50 kW (0.5-2.0 HP) for 230 (220-240) or 400 (380-420) Volt/50 Hz. The rotating propeller (2800 RPM) produces an adjustable current, through which air is drawn from the surface and distributed in fine bubbles. The diffused air aerate up to the water surface and the circulation created from the bubbles displaces the surrounding water, thus breaking up stratified areas. This constant surge forces the pond to turn over, bringing cooler bottom water to the surface, where it picks up additional oxygen from the atmosphere. Therefore the oxygen introduction rate and dissolved oxygen content is always as high as possible. Through the eutrophication process (from faces and feeds) there is usually an oxygen deficit at depth, therefore this system introduces the oxygen where it is needed, not only on the surface. If submerged, pure oxygen instead of air can be introduced. Long contact time of the fine bubbles in the water, ensures also this system is very effective. Depending on depth, the air flow rate is up to 40 m³/kW/h. At an oxygen content of 6 mg O₂/l at beginning, one 1.0 HP unit in use with air, introduce over 0.32 kg O₂/h which is, at a water temperature of 20 °C, the oxygen demand for over 1000 kg table sized trout or up to 3000 kg of other fish species. Depending on installation, depth and current, sediments can also be removed. If the aerator is positioned near the water surface it also acts as an ice clearing machine in winter. Strong circulation also eliminates pond stratification and organic matter deposition. Finally thanks to the floatation phenomenon (foaming), this aerators make it possible to remove excess algae proliferation, colloidal substances, mud and many other suspended particles and improves water quality. With this proven system, all variants of aeration, circulation and oxygenation are possible. These injection aerators are supplied at reasonable costs (in 2 cartons) as preassembled motor- and float-kit. They are lightweight compact systems (approx. 20-28 kg), and very easy to install. Available in two models: with propeller protection fingers (IB) or with propeller protection frame (F7).



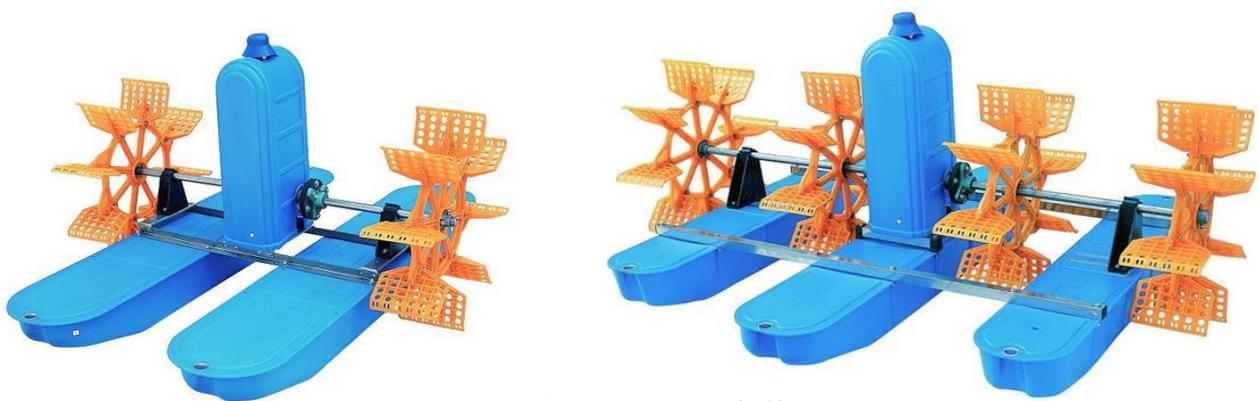
With protection fingers (left)
With protection frame (right)

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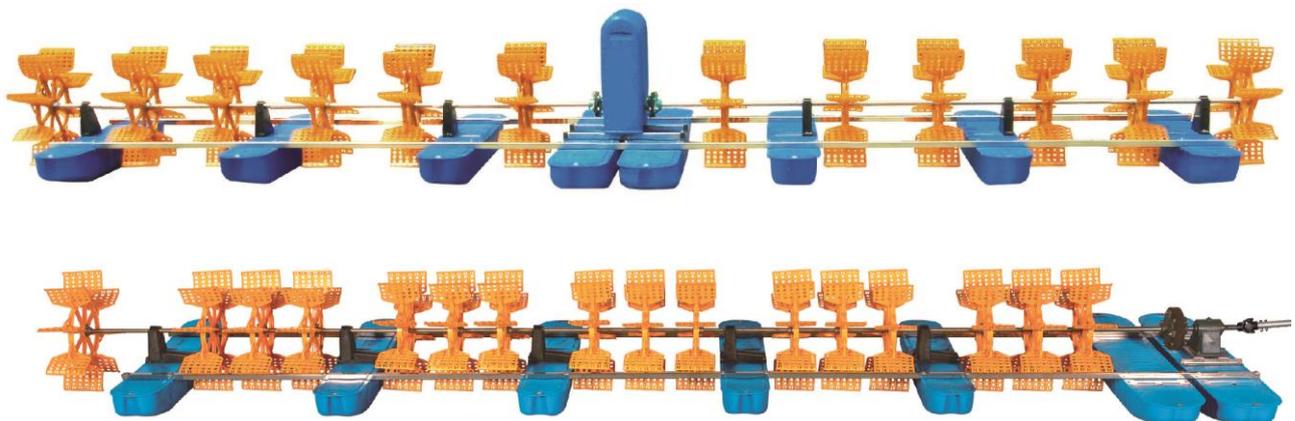
Paddlewheel Aerators

with
H-float

This paddlewheel aerators are widely used all over the world, especially in raceways and large ponds. They are available with a motor, produced for endurance run, in different power ratings, from 0.5 to 2.2 kW (0.6-3.0 HP) for 230 (220-240) or 400 (380-420) Volt/50 Hz and with 2-6 paddle-wheels (100-140 RPM). They have (depending on quantity of paddle-wheels) a wide of 1,2 or 2,1 or 2,7 m, a length of 1,6-1,8 m and a height of 0,9 m approximately, and a weight of 80-120 kg. They allow for an oxygen transfer rate of up to 1.5 kg/kW/h or at an oxygen content of 6 mg O₂/l at beginning approx. 0.5 kg/kW/h. Wheel and frame are made of stainless steel, the yellow paddles from special plastic material and the blue H-formed floats from thick UV- and ozone resistant plastic. As accessory are cable (max. 25 m) and plugs or better plugs with motor protection available. The aerators ship for reasonable costs, as preassembled mounting kits, on a pallet. Larger/stronger paddlewheel aerators with 10 to 16 paddlewheels, on request.



With 2 paddlewheels (left)
With 4 paddlewheels (right)



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Paddlewheel Aerators

with T-float

This paddlewheel aerators are especially suitable for intensive farms, where economic is important. At this new developed systems all possible failures and defects of other known products have been removed. The systems have been tested under hardest conditions and have a very high efficiency, with the same time low investment and operation costs. There are no bearings of the wheel necessary and also no couplings and discs, this reduce friction and increase efficiency and also reduce the possible parts which could become defect with time. A very long self-live and high efficiency is also guaranteed through the worm-gearing. The motor is specially sealed against moisture. Paddles, wheel and frame are made of stainless steel, the black T-formed floats from thick UV- and ozone resistant material (HD-PE).

This aerators are available with a motor, produced for endurance run, in different power ratings, from 0.18 to 0.75 kW (0.2-1.0 HP) for 230 (220-240) or 400 (380-420) Volt/50 Hz and with 2 paddle-wheels (140 RPM). They have (depending on quantity of paddle-wheels) a length of 1.5 m, a wide of 1.4-1.6 m and a height of 0,8 m approximately, and a weight of 20-60 kg. They allow for an oxygen transfer rate of up to 1.5 kg/kW/h or at an oxygen content of 6 mg O₂/l at beginning approx. 0.5 kg/kW/h.

To use this paddlewheel aerators also with pure oxygen instead of air, a special oxygen cover (L x W x H: 2.5 x 1.8 x 1.0 m, weight: 110 kg) is available as option. This special formed cover inside guarantees that no oxygen (feed up to 15 l/min) disperse or waste, after the water leaves the aerator. As there are no seals necessary at the bearing of the wheel, also this guarantees that there is no oxygen wasted and thus this makes the system very effective too. The efficiency is up to 90 % and the oxygen introduction up to 2-3 kg O₂/kWh. As accessory are cable (max. 25 m) and plugs or better plugs with motor protection available. The aerators ship completely assembled (except the T of the float), on a pallet.



Without oxygen cover (left)
With oxygen cover (right)

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Propeller Aerators

with

Underwater Motor

This propeller aerator was specially developed for intensive production of fish in tanks, raceways, cages and small ponds. The maintenance free, heavy duty, underwater motor, produced for endurance run, in two power ratings, in 0.37 or 0.75 kW (0.5 or 1.0 HP) for 230 (220-240) or 400 (380-420) Volt/50 Hz (stronger on request), has a mounted propeller (1400 RPM) with protection fingers which allows a high water circulation of up to 120-190 m³/h (splash height 70-80 cm and splash diameter 150-200 cm). It allows an oxygen transfer rate of up to 1.25 kg/kW/h or at an oxygen content of 6 mg O₂/l at beginning approx. 0.4 kg/kW/h. Motor casing is made of cast steel and the frame of stainless steel. The small, blue or black (single or double) float (70 x 70 cm) as well as the compact and lightweight system (24-25 kg) makes it fast and easy to install. Only for the smaller (0.37 kW) type, a protection basket made of galvanized steel (with 12 mm grating) or a water conveyer (each 0.5 m deep) made of plastic, is available. Additionally, cable (max. 20 m) and plugs can be delivered. The aerators ship preassembled as mounting kits, in two parcels.



With water conveyer (left)
With protection basket (right)

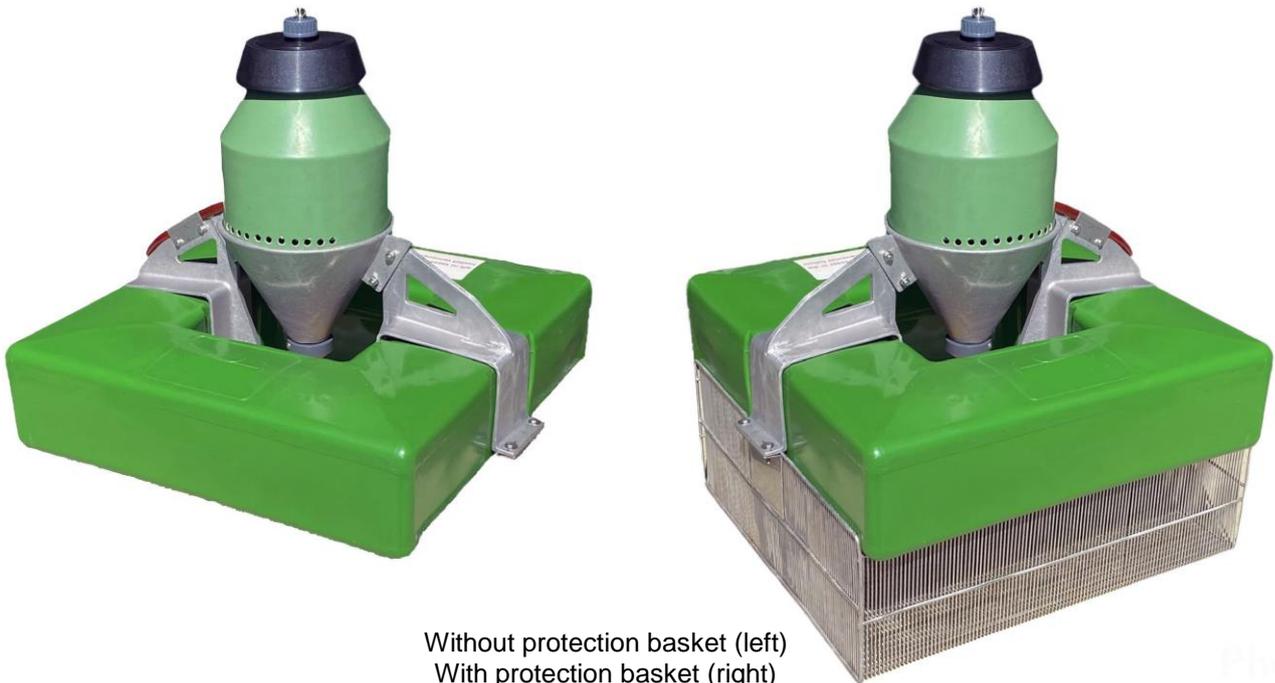
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Propeller Aerators

with

Overwater Motor

This propeller aerator was specially developed for intensive production of fish in tanks, raceways, cages and small ponds. The maintenance free, heavy duty, overwater motor, produced for endurance run, in two power ratings, in 0.37 or 0.75 kW (0.5 or 1.0 HP) for 230 (220-240) or 400 (380-420) Volt/50 Hz, has a mounted propeller (1400 RPM) which allows a high water circulation of up to 100-180 m³/h (splash height 75-90 cm and splash diameter 180-250 cm). It allows an oxygen transfer rate of up to 1.25 kg/kW/h or at an oxygen content of 6 mg O₂/l at beginning approx. 0.4 kg/kW/h. Motor casing and frame is made of cast steel. The small, green float (70 x 70 cm) as well as the compact and lightweight system (28-30 kg) makes it fast and easy to install. As accessories a stainless steel protection basket (with 4 or 12 mm grating) is available. Additionally, cable (max. 25 m) and plugs or better plugs with motor protection are available as accessory. The aerators ship completely assembled and ready to use, on a pallet.



Without protection basket (left)
With protection basket (right)

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Water Aerators

Alternatives



Blower-Aerator



Pump-Aerator

Aerator	Blower-Aerator	Pump-Aerator
Type	BA-370	MB-3
Motor	Overwater	Underwater
Casing	Cast steel	Stainless steel
Power (kW)	0,37	0,07
Connection (V)*	400	230
Turnover (m ³ /h)	40	3,5
Float shape	□	○
Size (cm)	70x70	Ø 50
Weight (kg)	30	10
Transport	Pallet	Carton
Delivery	Ready to Use	Assembly Kit
Accessory	Cable, Plug, Switch	Non

*Electricity (AC): 230 (220-240) V/50 Hz or 400 (380-420) V/50 Hz.

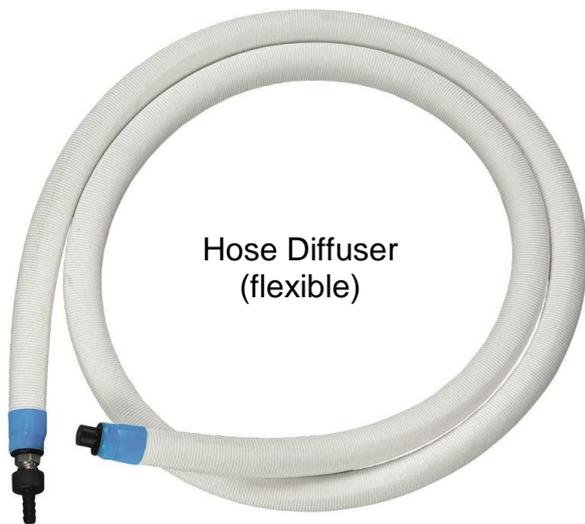
If questions, please contact:

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Air Diffusers

Selection



Hose Diffuser
(flexible)



Tube Diffuser



(stiff)



Cross Diffuser

Specifications

Diffuser	Ceramic Diffusers						Membrane Diffusers		
	Tube					Cross	Hose		
Capacity (m ³ /h)	2	4	6	4	6	8	3	6	9
Length (cm)	31	63	88	50	113	50x50	100	200	300
Diameter (mm)	60						32		
Connection (mm)	19						13		
Position (connect)	side			central			side		
Pressure drop (bar)	0,0						0,2		
Weight (kg)	On request						1,5	3,0	4,5
Options	Connection					Tube	Adapter		
Accessory	Hoses, Distributors, Blowers (Float for cross)								

All data are average values (±10 %). Technical changes reserved

If questions, please contact:

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Air Blowers

Selection



Single-stage



Double-stage

(Symbol-photos)

Accessories



Air-filter, Manometer, Pressure-valve, Non-return-valve



Noice-reduction-cover

Made in the European Union!

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Air Blowers

Specifications

Blower	Single stage									
Type MS	00	03	04	05	06	07	08	09	10	11
Motor power (kW)*	0,20	0,37-0,5	0,75-1,5	1,1-3,0	2,2-4,0	2,2-5,5	3,0-9,2	4,0-11,0	5,5-15,0	7,5-18,5
Pressure max(mbar)	90	150	250	300	350	350	425	425	425	450
Connections (inch)	1,00	1,25	1,50	2,00	2,00	3,00	3,00	4,00	4,00	4,00
Weight (kg)	6,5	12,0	29,5	30,5	35,2	61,5	77,5	87,5	95,0	128,5
Options	Other electricity, Protection paint									
Accessory	Air-filter, Manometer, Pressure-valve, Non-return-valve, Noise-reduction-covers									
Capacity (m3/h):*	55	74	137	219	304	414	536	663	782	944
at 100 mbar	0	38	96	166	242	334	450	570	684	847
at 200 mbar		0	55	113	181	255	363	477	585	752
at 300 mbar			0	60	120	175	276	384	487	660
at 400 mbar				0	0	0	188	291	389	571
Capacity min ⁺	0	21	35	60	95	135	168	268	365	528

*Motor power = at Pressure max (otherwise less). Motor <5 kW also for 230 V, >5 kW only for 400 V.

*Capacity = Maximum for pressurized air at 20 °C and 1013 hPa, at 50 Hz (= 2900 RPM).

+Capacity min (m3/h) at Pressure max (mbar = hPa). Tolerance ±10 %, Changes reserved.

Blower	Double-stage									
Type MD	15	20	30	40	07	08	09	10	11	12
Motor power (kW)*	0,55	0,75-1,1	1,1-1,5	2,2-3,0	3,0-5,5	4,0-7,5	5,5-7,5	7,5-9,2	7,5-11,0	11,0-15
Pressure max(mbar)	300	400	425	500	650	650	625	650	650	650
Connections (inch)	0,75	1,25	1,25	1,25	2,00	2,00	4,00	4,00	4,00	4,00
Weight (kg)	12,5	21,5	26,5	36,5	64,5	72,0	90,5	92,5	108,0	130,0
Options	Other electricity, Protection paint									
Accessory	Air-filter, Manometer, Pressure-valve, Non-return-valve, Noise-reduction-covers									
Capacity (m3/h):*	50	60	91	117	181	236	310	386	458	472
at 100 mbar	37	45	71	99	165	218	288	357	423	445
at 200 mbar	25	30	54	81	150	202	268	330	390	418
at 300 mbar	14	18	39	65	135	186	248	305	259	392
at 400 mbar	0	7	26	50	121	172	229	282	329	366
at 500 mbar		0	0	36	108	159	211	261	301	341
at 600 mbar				0	96	147	194	242	275	316
Capacity min ⁺	14	7	23	36	90	142	190	232	263	304

*Motor power = at Pressure max (otherwise less). Motor <5 kW also for 230 V, >5 kW only for 400 V.

*Capacity = Maximum for pressurized air at 20 °C and 1013 hPa, at 50 Hz (= 2900 RPM).

+Capacity min (m3/h) at Pressure max (mbar = hPa). Tolerance ±10 %, Changes reserved.

Air blowers with underwater motor, on request!

Optimal value for price!

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