# OXYGENATING WATER TECHNOLOGY

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# COMPANY

Acquaecoremedy offers systems and equipments for the water treatment, using own patented technology that provides high efficiency purification results at the lower energy consumption, which has always been the milestone of our mission. Submersible electro-injectors suitable to improve all existing treatment processes and for the future more efficient ones.

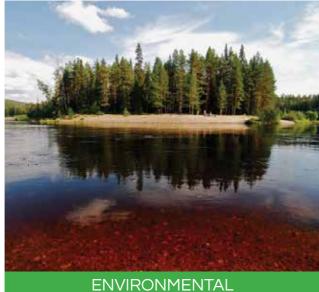
Acquaecoremedy designs and realizes treatment plants with all the classical technologies, including the traditional ones, which are mainly suitable for civil or equivalent discharges, as well as the more modern and efficient ones suitable for industrial discharges with particular purification needs, ensuring the partial or total water reuse into the food industry processes, always with attention for the specific request and process.







CIVIL AND INDUSTRIAL WASTEWATER TREATMENT



RESTORATION



PROCESSING IN PRODUCTION SYSTEMS



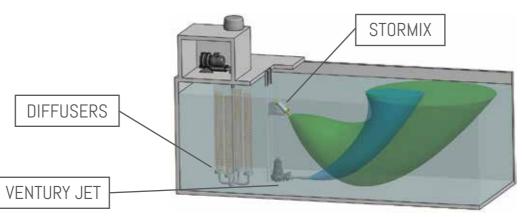
COMBINED SYSTEMS

BEST SPECIFIC PERFOMANCES



## TECHNOLOGY COMPARISON

There are several oxygenation solution in the water treatment plants, but the most commonly used are blowers with diffusers or venturi-jet, depending on the size and kind or treatment. In the table below, we compare these traditional technologies with the innovative Stormix submersible aerators that offer both process and maintenance benefits as well as initial investment.



	STORMIX	BLOWERS + DIFFUSERS	VENTURI JET
DISSOLUTION EFFICIENCY	<ul> <li>UP TO 50%</li> <li>Performance is more closely linked to the water column and the resulting bubble retention time, rather than to installed power.</li> <li>Technical gases like ozone and oxygen can be injected in its standard configuration as well. This feature makes it the perfect solution whenever a strong chemical oxidation is required.</li> </ul>	<ul> <li>UP TO 7%</li> <li>Its performance can be increased using add-on components (circulators)</li> <li>They can only inject air.</li> <li>As the water column increases, the power required for operation will increase accordingly.</li> </ul>	UP TO 25/30% The installed power is directly linked to the depth of the tank and to the resulting pressure that the pump has to overcome. It can only inject air.
BUBBLE SIZE	The high rotation speed of the propeller generates a large amount of MICRO-BUBBLES having a diameter less than 1 mm. As a result, a very large air-water exchange surface is created.	Medium or large-diameter bubbles can be generated depending on the type of diffuser. Smaller bubbles can be generated pro- vided that the blower's power is significantly increased. The plates with micro-holes can get easily clogged.	Medium-large diameter bubbles. Since air comes into contact with water inside an ejection tube, the bubble diameter is only reduced by the turbulence of the flow.
MIXING	Great capacity of mixing and homogenization. Bubbles follow the flow generated by the impeller and after- wards rise vertically to the surface. The spreading of the bubbles all over a large surface prevents them from aggregating, that would lead to a lower dissolution efficiency. Its circulation capacity makes the entire volume's treatment easier, avoiding the settling of solids and the ap- pearance of dead zones with a low oxygen concentration.	Low mixing and homogenization capacity. Bubbles rise to surface following a vertical trajectory, caus- ing a shorter contact time with water. While rising, bubbles aggregate, increasing their average diameter and reducing the air-water contact surface. As a result, the dissolution efficiency drops.	Low mixing capacity. Starting from the bottom, bubbles rise to the surface with a strongly vertical trajectory. The mixing effect is very moder- ate and it is generated by the water flow of the pump, which is determined by its specific flow rate.
AIR TEMPERATURE	It injects air taken directly from outside without changing its temperature.	The blower and the air distribution tubes heat up during operation, increasing the temperature of the injected air. Consequently, injected air will contain a lower percentage of oxygen.	It injects air taken directly from outside without changing its temperature.

#### INSTALLATION

#### Low installation costs.

Easy system with self-standing components. No additional spaces are required. It can be installed on floating supports for test purposes without stopping the system.



Self-standing components. It does not require the system to

be emptied or stopped and it can be handled from the surface

or through inspection. Easy and quick handling that can be

carried out by just one operator. All motors can be fully recon-

ditioned through agreed maintenance programmes.

#### High installation costs.

Complex system: valves, downpipes, pipes, diffusers. A dedicated, soundproof and air-conditioned technical room is needed for the blower.



Single system. The water treatment system has to be stopped and the compartment needs to be emptied and sanitised before having access to diffusers. Complex maintenance due to the high number of elements to be installed, which are also difficult to be reached for checking purposes.

#### Low installation costs.

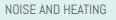
Easy system with self-standing components. No additional spaces are required. It cannot be installed for test purposes, because it needs to be installed on the bottom and motors are usually heavy and cumbersome.



Self-standing components.

It does not require the system to be emptied or stopped and it can be handled from the surface or through inspection. Easy and quick handling that can be carried out by just one operator only for the smallest models.





The submersible motor does not heat up and it is very smooth-running.



ENERGY CONSUMPTION / EFFICIENCY

Higher energy efficiency.

Since the aerator is installed a few centimetres away from the surface, the pressure that needs to be overcome to inject air is really low. The bubbles trajectory is the longest possible. Starting from the surface, they reach the bottom and spread all over a large area, then they slowly rise towards the atmosphere.



The external blower generates noise and can reach high temperatures.



The deeper the tank, more power will be needed to allow the blower to suck in air from the surface. Injection is performed on the bottom and without using mixers. This causes a quick rise of the bubbles towards the surface.

The submersible motor does not heat up and it is very smooth-running.



The deeper the tank, more power will be needed to allow the pump to suck in air from the surface. Injection is performed on the bottom and without using mixers. This causes a quick rise of the bubbles towards the surface.

### STORMIX MA

Stormix MA is classified as a powerful aerator. The speed of its propeller creates a pressure drop that draws air from the surface through a suction tube. Stormix MA injects a large volume of air in the form of micro bubbles. It is dissolved by turbulence, optimizing the dissolution of air and oxygen in the water.

Stormix MA can distribute and dissolve pure oxygen or ozone, or it can be used to inject and mix chemicals to the water. Stormix MA can be provided in a floating version or wall mounted, for wastewater aeration, environmental restoration and in various aquaculture and biofloc applications. There are 3 different types of propellers available for particular needs and applications.



#### 50 HZ

Single phase 230 V	Three phase 400 V	Propeller	Nom. Pow. HP	Nom. Pow. kW	Abs. kW Single phase 230 V	Abs. kW Three phase 400 V	r.p.m. / 1"	Weight kg
MA05 0,5 M	MA05 0,5 T	A/C/INT	0.5	0.37	0.5	0.7	2800	16
MA08 1 M	MA08 1 T	A/C/INT	1	0.75	1.1	1	2800	17
MA12 2 M	MA12 2 T	A/C/INT	1.5	1.1	1.3	1.5	2800	17.5

#### Other voltage available on request

50 HZ						
Three phase 230 V - 400 V	Propeller	Nom. Pow. HP	Nom. Pow. kW	Abs. kW	r.p.m. / 1"	Weight kg
PR 30 T	A-C	3.0	2.2	2.9	2800	26
PR 40 T	A-C	4.0	3.0	4.1	2800	28

#### 60 HZ

Single phase 110 V - 220 V	Three phase 400 V	Propeller	Nom. Pow. HP	Nom. Pow. kW	Abs. kW Single phase 230 V	Abs. kW Three phase 400 V	r.p.m. / 1"	Weight kg
MA05 0,5 M	MA05 0,5 T	A/C/INT	0.5	0.37	0.5	0.7	2800	16
MA08 1 M	MA08 1 T	A/C/INT	1	0.75	1.1	1	2800	17
MA12 2 M	MA12 2 T	A/C/INT	1.5	1.1	1.3	1.5	2800	17.5

Other voltage available on request

#### STORMIX PR

Stormix PR is our most powerful electric, submersible, and ultra-high efficiency aerator, available in bronze or cast iron. Aside from circulating the water, Stormix PR is capable of breaking down the air bubbles to such a size as to ensure oxygen transfer rates that are vastly superior to traditional aeration systems.

All the differet kinds of support for Stormix PR is vertically adjustable up to 45° degrees to better adapt to all possible forms of bodies of water to be oxygenated. Stormix PR aerator can be installed in two main versions: with floats to track tank water levels in aerated equalization tank, or on fixed supports anchored to the bottom, the walls or pillars present in the pool or lake.



voltage available on request

60 HZ						
Three phase 230 V - 380 V - 400 V	Propeller	Nom. Pow. HP	Nom. Pow. kW	Abs. kW	r.p.m. / 1"	Weight kg
PR 30 T	A-C	3.0	2.2	2.9	3350	26
PR 40 T	A-C	4.0	3.0	4.1	3350	28

Other voltage available on request







# UP TO 40-50% WITH AIR





02 CIRCULATION

BEST EFFICIENCY IN OXYGEN TRANSFER RATE



# FLOATING SOLUTIONS FOR ALL MODELS

FLOATING SUPPORT FRAME AVAILABLE TO SUIT WATER LEVEL VARIATION IN SBR OR EQUALIZATION TANK

# STATIC STORMIX SOLUTIONS

#### MIXER BR

Mixer BR is classified as a high-flow, energy efficient circulator. BR is very light, easy to handle, sturdy and durable, suitable for use in fresh and salt water. Mixer BR ensures circulation and stratification in ponds with a surface area of up to 3000 m2. Through equalization, mixer BR allows the complete and uniform distribution of all the nutrients and oxygen over the entire volume of water. Mixer BR is available in two versions: BR and FS, with 1650 rpm and 3350 rpm respectively. The different powers speeds make the BR a circulator highly versatile and adaptable to different situations. Flow and safety conveyors are also available to meet diffused or high speed, direct flows.



#### 50~HZ Other voltage available on request

Single phase 230 V	Three phase 400 V	Nom. Pow. HP	Nom. Pow. kW	Abs. kW Single phase	Abs. kW Three phase 400 V	r.p.m. / 1"	Weight kg
BR20 M 0,5 HP	BR20 T 0,5 HP	0.55	0.37	0.6	0.7	1400	16.5
BR40 M 1 HP	BR40 T 1 HP	1	0.75	0.9	1.0	1400	17.5
BR05 FS M 0,5 HP	BR05 FS T 0,5 HP	0.5	0.37	0.5	0.5	2800	15
BRO8 FS M 1 HP	BRO8 FS T 1 HP	1	0.75	1.0	1.0	2800	16.5
BR12 FS M 1,5 HP	BR12 FS T 1,5 HP	1.5	1.1	1.5	1.5	2800	16.5
BR20 FS P M 2 HP	BR20 FS T 2 HP	2	1.5	1.9	1.8	2800	20/17.5
	BR25 FS P T 3 HP	3	2.2		2.7	2800	20

#### 60~HZ Other voltage available on request

Single phase 230 V	Three phase 400 V	Nom. Pow. HP	Nom. Pow. kW	Abs. kW Single phase	Abs. kW Three phase 400 V	r.p.m. / 1"	Weight kg
BR05 M 0,5 HP	BR05 T 0,5 HP	0.5	0.37	0.6	0.7	1650	16.5
BRO8 M 1 HP	BRO8 T 1 HP	1	0.75	1.1	1.0	1650	17.5
BR12 P M 1,5 HP	BR12 P T 1,5 HP	1.5	1.1	1.5	0.5	1650	20
BR05 FS M 0,5 HP	BR05 FS T 0,5 HP	0.5	0.37	0.5	1.0	3350	15
BRO8 FS M 1 HP	BRO8 FS T 1 HP	1	0.75	1.0	1.5	3350	16.5
BR12 FS M 1,5 HP	BR12 FS T 1,5 HP	1.5	1.1	14	1.8	3350	16.5
BR20 FS P M 2 HP	BR20 FS T 2 HP	2	1.5	2.2	2.7	3350	20/17.5
	BR25 FS P T 2,5 HP	3.5	2.2			3350	20

### HIGHER VOLUME MOVED AT THE MINIMUM POWER SUPPLY CIRCULATORS

#### MIXER RIO

Rio AG is classified as a powerful circulator for high flow and low energy consumption. Rio AG is a compact and powerful system, characterized by a motor with adjustable inclination of up to 15° from horizontal, in order to better adapt to individual needs. The Rio's low speed double helical setting allows for very quiet operation does not disturb animals in the lake, while minimizing the environmental impact on the aquatic ecosystem.

Rio AG ensures circulation and stratification in ponds with a surface area of up to 10,000 m2, using one single motor. It is possible to extend operations using multiple motors. Through equalization, the Rio AG allows the complete and uniform distribution of all the nutrients and oxygen over the entire volume of water. Rio AG is available in various installations. The floatable version allows for quick and easy positioning. Installations can be fixed or with an adjustable guide, customizable to individual needs.

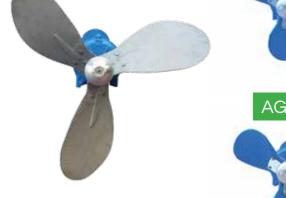


#### 50 HZ Other voltage available on request

Single phase 230 V	Three phase 400 V	Nom. Pow. HP	Nom. Pow. kW	r.p.m. propeller	reduction ratio	propeller n°/mm	r.p.m. / 1"	Weight kg
AG 10 M	AG 10 T	1	0,75	123	1/11,35	3/740	1400	38
AG 20 M	AG 20 T	2	1,50	115	1/12,15	3/860	1400	42
AG 30 M	AG 30 T	3	2,20	245	1/12,15	3/580	2800	46
AG 40 M	AG 40 T	4	3,00	230	1/12,15	3/610	2800	49

#### $60\ HZ$ Other voltage available on request

gle phase ) V	Three phase 400 V	Nom. Pow. HP	Nom. Pow. kW	r.p.m. propeller	reduction ratio	propeller n°/mm	r.p.m. / 1"	Weight kg
10 M	AG 10 T	1	0,75	123	1/11,35	3/740	1400	38
20 M	AG 20 T	2	1,50	115	1/12,15	3/860	1400	42
30 M	AG 30 T	3	2,20	245	1/12,15	3/580	2800	46
40 M	AG 40 T	4	3,00	230	1/12,15	3/610	2800	49



Stainless Steel 304 Propeller Available

#### COMBINED SYSTEMS BEST SPECIFIC PERFOMANCES



#### 50 HZ - 60 HZ Other voltage available on request / Other combinations available

Single phase 110 V - 220 V - 230 V	Three phase 220 V - 380 V - 400 V - 440 V	Motors	Power Circulator Model	Power Circulator HP	Power Circulator kW	Power Aerator Model	Power Aerator HP	Power Aerator kW38
Combo 20 M	Combo 20 T	2	AG20	2	1,5	MA12	1,5	1,125
Combix M	Combix T	3	AG20	2	1,5	MA12	1,5	1,125
Combito CT408 M	Combito CT408 T	2	BR40	1	0,75	MA08	1	0,775
Combo Pro 3 M	Combo Pro 3 T	2	AG20	2	1,5	PR30	3	2,25
Combo Pro 4 M	Combo Pro 4 T	2	AG20	2	1,5	PR40	4	3.0
Combix Pro 4 M	Combo Pro 4 T	3	AG20	2	1,5	PR40	4	3,0

to move large volumes water with the ability of aerators to in- make it possible to transfer up to 10 times the amount of oxygen Installations are available with various combinations of motors,

fied as combined systems that marry the ability of circulators time between the air/oxygen and water. The combined systems large reservoirs and any type of highly professional application. ject large volumes of air or oxygen. Combined system create compared to a simple aerator, with very little additional energy, at various strengths, numbers and types, according to the speexponential yields with a high percentage of oxygen transfer and thanks to the greater volume of water managed by the system. cific needs and requirements.

COMBITO – COMBO – COMBO PRO and COMBIX PRO, are classi- water movement due to the considerable increase in the contact COMBITO – COMBO – COMBO – COMBO PRO and COMBIX PRO are ideal for

#### BEST SPECIFIC PERFOMANCES COMBINED SYSTEMS



4 MIX

#### 50 HZ - 60 HZ Other voltage available on request

Single phase 110 V 220 V 230 V	Three phase 220 V 380 V 400 V 440 V	Motors	Models	Total Hp	Total kW
TRIPLEX 3M	TRIPLEX 3T	3	PR30	12	9
TRIPLEX 4M	TRIPLEX 4M	3	PR40	16	12

These aeration stations are designed to introduce large amounts These aeration systems are suitable both as emergency soluof air into a single injection point. Triplex can give the flow a precise direction, while 4MIX generates a 360° effect.

tions and for large aeration tanks with high organic loads, such as leachates from dumpsites or industrial treatments.

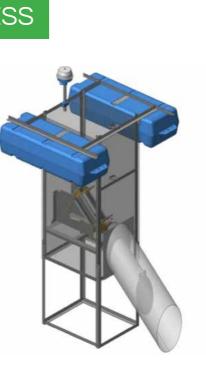
#### 50 HZ - 60 HZ Other voltage available on request

Single phase 110 V 220 V 230 V	Three phase 220 V 380 V 400 V 440 V	Motors	Models	Total Hp	Total kW
4MIX 3M	4MIX 3T	4	PR30	12	9
4MIX 4M	4MIX 4M	4	PR40	16	12

### SUBMERSIBLE SOLUTIONS FOR MBBR PRECESS



- Porwefull circulation and mixing action
- Homogenization of the whole volume
- High efficiency in oxygen transfer rate
- Up to 35 kg 02/h transferred useing pure oxygen





AIR APPLICATION

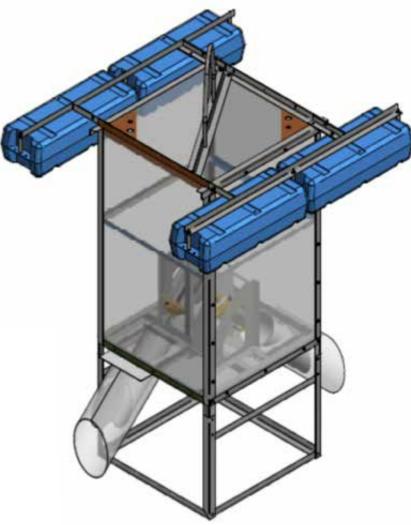
PURE OXYGEN APPLICATION

#### $50\ HZ$ Other voltage available on request

Three phase 230 V - 400 V	Propeller	Nom. Pow. HP	Nom. Pow. kW	Abs. kW	r.p.m. / 1"	Weight kg
PR 30 T	A-C	3.0	2.2	2.9	2800	26
PR 40 T	A-C	4.0	3.0	4.1	2800	28

#### $60\ HZ$ Other voltage available on request

Three phase 230 V - 380 V - 400 V	Propeller	Nom. Pow. HP	Nom. Pow. kW	Abs. kW	r.p.m. / 1"	Weight kg
PR 30 T	A-C	3.0	2.2	2.9	3350	26
PR 40 T	A-C	4.0	3.0	4.1	3350	28



## DUPLEX APPLICATION FOR MBBR

- N°2 Stprmix PRT 3-4HP submerges usper efficient aerator.
- 240m3/h air in one single floating frame
- High mixing action
- Suitable for new MBBR process or to improve old MBBR process capacity
- Easy and fast to install
- No need to emptying the MBBR reactor to install



#### SPRINT

Sprint is classified as surface aerator and is suitable for use on installations in fresh and salt water, as the durability of materials allows it to be used without problems in seawater.

Sprint is highly efficient, and allows for increased levels of oxygen in the water without causing turbulence on the bottom.

It is suitable for decorative purposes, due to its high fountain, which also available with colored lights for spectacular nighttime applications.

Sprint is Available with floats.



#### 50~HZ Other voltage available on request

Single 230 V	e phase /	Three phase 400 V	Nom. Pow. HP	Nom. Pow. kW	Fountain height mt	Fountain width mt	Capacity I/min	r.p.m. / 1"	Weight kg	Cable mt
SPRIN SPRIN SPLAS	NT 0,8 M NT 1 M NT 1,5 M SH 2008 1,5 M SH 2008P 2 M	SPRINT 0,8 T SPRINT 1 T SPRINT 1,5 T SPLASH 2008 1,5 T SPLASH 2008P 2 T	0.8 1 1.5 1.5 2	0.6 0.75 1.1 1.1 1.5	1.3 1.7 1.9 1.1 1.3	5.5 6.5 7 5 5.5	1110 1250 1500 3100 3700	2850 2850 2850 2800 2800	24 25 25 24 25	20 20 20 20 20 20
		SPLASH 2008P 3 T	3	2.2	1.3	6.5	5400	2800	27	20

#### $60\ HZ$ Other voltage available on request

Single phase	Three phase	Nom. Pow.	Nom. Pow.	Fountain height	Fountain width	Capacity	r.p.m. / 1"	Weight	Cable
110 - 220 V	220 V - 380 V - 440 V	HP	kW	mt	mt	I/min		kg	mt
SPRINT 0,8 M SPRINT 1 M SPRINT 1,5 M SPLASH 2008 1,5 M SPLASH 2008P 2 M	SPRINT 0,8 T SPRINT 1 T SPRINT 1,5 T SPLASH 2008 1,5 T SPLASH 2008P 2 T SPLASH 2008P 3 T	1.5 2 2.5 1.5 2 2.5	1.1 1.5 1.9 1.1 1.5 1.9	2.1 2.5 2.9 1.3 1.4 1.7	6.5 7 7.5 6.5 7 7.5	1300 1370 1450 3100 3800 5000	3350 3350 3350 3350 3350 3350 3350	24 24 27 24 25 27	20 20 20 20 20 20 20

#### OXIGENATING, DEGASSING, ORNAMENTAL SURFACE AERATOR

Sprint fontains are perfect to marriage the aeration restoration effect with the ornamental purpose, available also with really scenographic night effect. - All the colors available also in combination - Dedicate control panel with timer and capacitors - Inverter control available



EcoMat is the latest innovative evolution of traditional Venturi systems. Its technology is based on the following concepts: Venturi systems, nozzles and flow accelerators.

traditional Venturi systems, thanks to its capacity to micronize air bubbles mixed with water, of the ECO2 allows a high dissolution of injected gas by increasing both the surface area, and thus increasing its efficiency in an exponential way.

This simple device not only enriches water with air but is also highly suitable to dissolve technical gases such as oxygen and ozone, with a very high dissolution rate due to the micro-bubbles it generates.

ECO2 is a Venturi injector that makes possible to enrich water via a pump or by gravity, with air or pure oxygen at a high dissolution transfer rate. It can operate with air, pure oxygen or ozone. It can EcoMat guarantees a percentage of transferred oxygen that is four times as much as that of also add and mix liquids, such as chemicals or disinfectant, into the water. The contact chamber the time of contact between air and water.

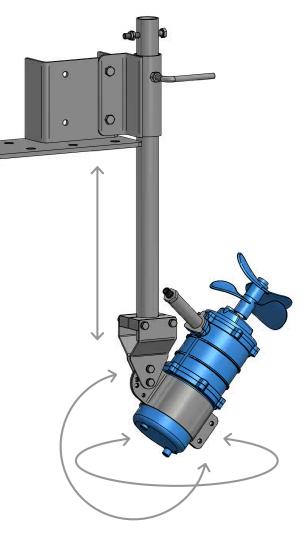
EC02 is very robust and requires no maintenance.

Each injector is able to operate in a pressure range between 0.8-1.8 atm with relative water flow rate between 30 and 150I/min. ECO2 can auto-inject air up to 1.2mt, with a pressure injector for ozone, oxygen, and other chemicals in a 10 meter plus water column.

### **DOCK MOUNT**

Light static installation suitable for mixing and aeration and deicing purposes. Easy and fast to install and orientate, it is available for vertical or horizontal installation as well as dock mounting solution for weeds removal. Really easy to lifting up and remove.







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