

**OXIWORKS<sup>®</sup> and OXIRISE<sup>®</sup>**



... the clear solution



OXIWORKS® aeration



Moving aerator chain



OXIRISE® in practical application

## BIOWORKS® sets the standards in aeration technology: OXIWORKS® with the cleaning system OXIRISE®

The efficient and economic operation of a wastewater treatment plant is mainly determined by the proper choice of the aeration system. BIOWORKS® convinces with its own solution: the aeration system OXI-

itself worldwide in numerous cases, in full activated sludge plants, but also in aerated lagoons and other applications. Because of the lateral movement of the floating air pipes, the suspended OXIWORKS® diffuser



WORKS® with the unique maintenance and cleaning system OXIRISE® - practically proven in numerous installations, of sound technical quality and with verifiably highest oxygen transfer rates.

Through years of experience in the field of aeration systems and with particular detailed knowledge for the needs of the operators, BIOWORKS® can offer a diffuser that combines energy efficiency, durability and easy maintenance in one product.

### Energy and cost savings by moving fine bubble aeration

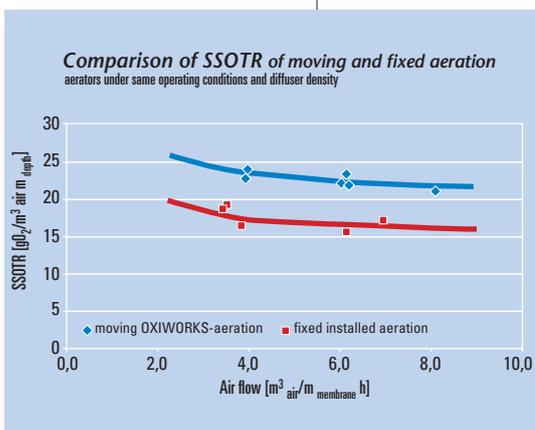
The basic principle of the floating and moving aeration, as used by BIOWORKS® has proven

can move easily and flexibly in the activated sludge basin, thus reaching zones with lower oxygen contents, all the while having minimum energy consumption.

BIOWORKS® went one step further. Through the development of the highly efficient fine bubble diffuser OXIWORKS®, the oxygen transfer in principal is improved. A cluster of many small air bubbles has more transfer surface than fewer and bigger air bubbles, with the direct result of increased oxygen transfer rate into the water - an universal principle, which has made fine bubble membrane aeration the most efficient in comparison to all other systems.

### Simple maintenance and cleaning by OXIRISE®

Floating aeration systems are in principle easier to maintain than fixed systems.



Since the diffuser elements need not be anchored to the tank floor, they can be maintained during the operation without emptying the basin. However manual pulling up is sometimes tiresome, mostly due to the slippery hoses, and the weight of the diffuser elements.

The response of the BIOWORKS® team to this particular request from the field was the development of the maintenance - and cleaning system OXIRISE®. This system is stunningly simple. By injecting pressurized air over a special air distribution system into the diffuser body, each individual diffuser can independently float to the surface. From there it can be directly inspected or maintained. Only 2 screws have to be loosened to detach a diffuser tube from the OXIWORKS® diffuser assembly and to change a membrane. This is simple and swift.

Another important effect of this system - through the high air load that shortly passes the membrane due to the lower differential pressure, the membrane is "flushed" from material that might stick to the outside.

### **Guarantee for quality and long servicelife**

The OXIWORKS® diffuser is a quality product, made in Germany, developed in-house by our well experienced experts for aeration systems. For the OXIWORKS® diffuser, we use solely durable and corrosion proof plastics or high quality stainless steel. The membranes which produce the fine air bubbles are made from temperature- and acid resistant silicone. OXIWORKS® diffuser are in full compliance with the latest state of technology.

### **In-house production line**

The diffusers are manufactured in-house, from joining of the plastic parts until end assembly. We only trust high quality raw material from reputable suppliers.

All components are from German production and are under meticulous quality control – ISO 9001 certified.

### **Testing facility**

The BIOWORKS® testing facility allows testing of aeration devices under different operating conditions.

### **OXIWORKS® with OXIRISE®, the advanced and practical aeration system:**

Embedded in the BIOWORKS® process, the aeration system OXIWORKS® with OXIRISE® offers a technological solution that combines high and durable quality with superior efficiency:

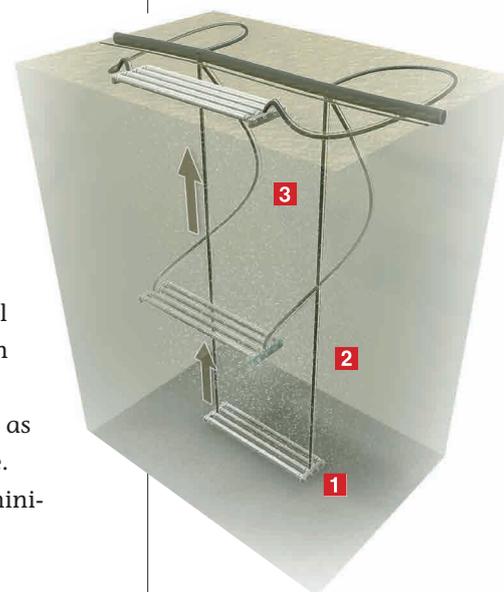
- energy efficiency is verifiably higher than those of comparable fixed installed aeration systems.
- the floating and moving aeration installation enables the cost-effective BIOWORKS® earth basin design with HDPE lining, resulting in dramatically lower construction costs. Diffuser elements don't need to be fixed on the bottom.
- all materials used with OXIWORKS® are chosen for longevity and durability as well as their suitability for operation in waste water.
- maintenance with OXIRISE® is as simple and effective as possible. O&M costs are dropping to a minimum.



*Diffuser production*



*In-house testing facility*



### **OXIRISE®**

- 1** Normal operating position of the diffuser
- 2** Surfacing of diffuser by injection of pressurized air
- 3** Diffuser in maintenance position at water surface



**BIOWORKS Verfahrenstechnik GmbH**

Wernher-von-Braun Straße 9

D-85640 Putzbrunn / Germany

[www.bioworks-gmbh.de](http://www.bioworks-gmbh.de)

Email: [info@bioworks-gmbh.de](mailto:info@bioworks-gmbh.de)

Phone: +49 - (0)89 - 451 519 56 - 0

Fax: +49 - (0)89 - 451 519 56 - 27