2019/7

“Aquablaster” Comparison with Normal Diffusers

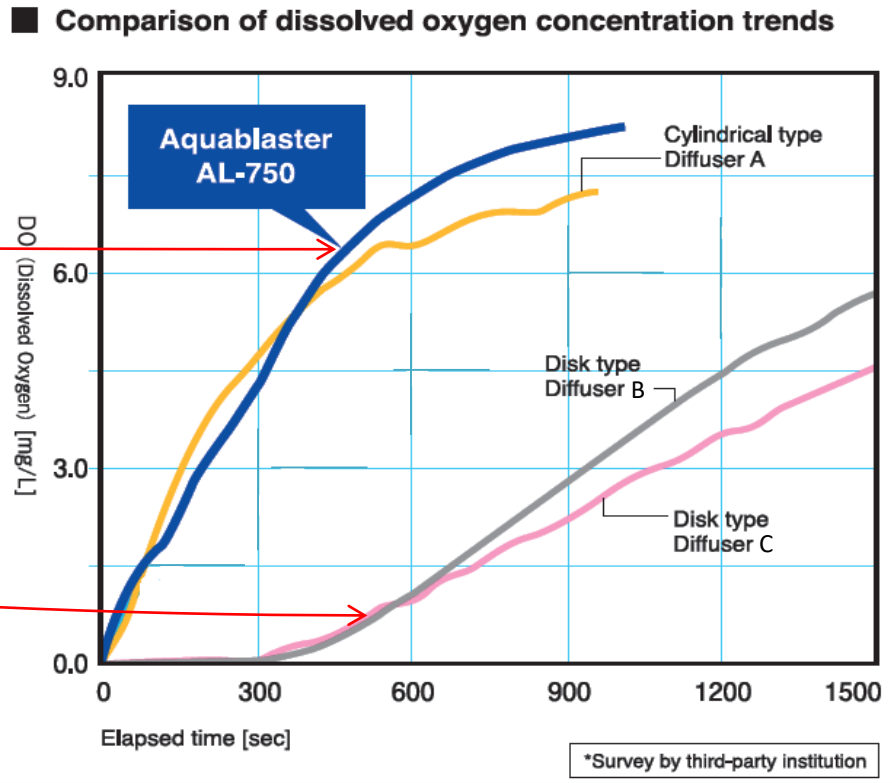
cYc Century Yamakyu Corporation

Oxygen Dissolution Comparison by Manufacturers

Figures are nominal values stated by each manufacturer

Product Name	Oxygen Dissolution Efficiency at 5m of Water Depth	Pressure Loss
“Aquablaster “ AL-750	23%	None
Tube Type Diffuser A	24%	280mmAq
Disc Type Diffuser B	28%	300mmAq
Disc Type Diffuser C	30%	600mmAq

	manufacturer	3rd-party survey
Aquablaster AL-750	4th	1st
Cylindrical type Diffuser A	3rd	2nd
Aquablaster Equivalent B	5th	3rd
Dixc type Diffuser C	2nd	4th
Disc type Diffuser D	1st	5th



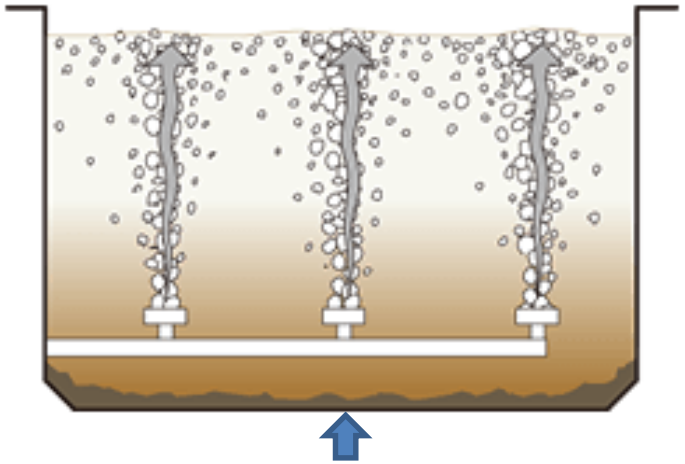
Note:
JIS (Japan Industrial Standard) does not state any standard of Oxygen Dissolution Efficiency.
As a result, currently, each Manufacturer measures it independently and publicizes the figures. we calculated Oxygen Dissolution Efficiency in the corner area of a water tank measuring 1,800 width x 1,800 horizontal depth x 5,000 water depth (unit: mm), but the results are only an indicator.

Please be aware that

not only **“Oxygen Dissolution Efficiency”** is important, but also **“Alpha Value”** is important **for treating Wastewater effectively.**

Comparison with Diffusers (Stirring Ability and Oxygen Dissolution Efficiency)

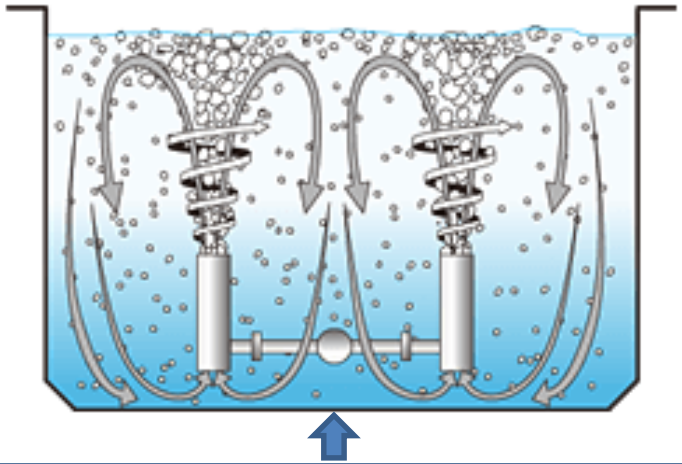
Conventional Diffusers



Sludge remains in the bottom

"Aquablaster"

Microscopic bubbles spread throughout the water tank



Sludge does not accumulate on the bottom

Special Patent Blades breaks Bubble and Sludge, and generates microscopic bubbles with powerful force, and pulverizes Sludges to proper size for Bacteria to eat.

High Oxygen Dissolution Efficiency

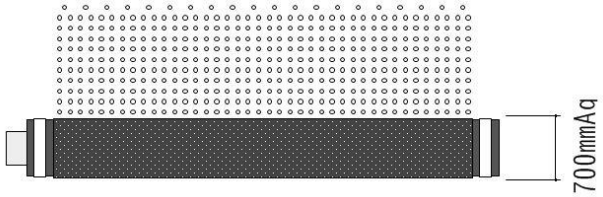
+ High Alpha Value

To maintain a Wastewater tank environment, it is crucial to promote the aerobic respiration metabolism of microbes. Installing "Aquablaster" in the Wastewater tank enables High-Speed, High Efficiency Decomposition and Purification.

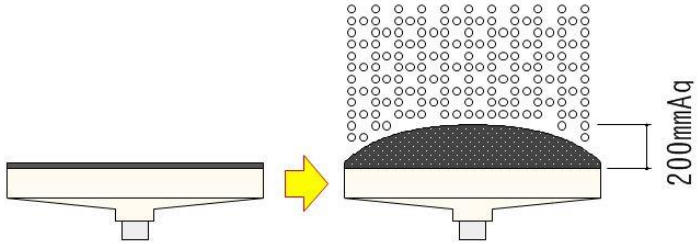
"Aquablaster" can treat Wastewater most effectively!

Comparison with Diffusers (Pressure Loss and Energy Consumption)

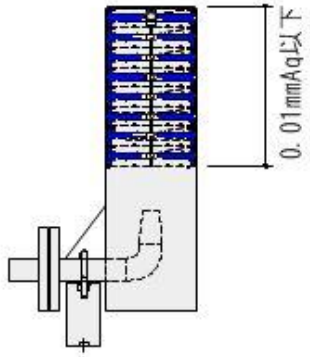
Tube type Diffuser
Pressure Loss：
600～700mmAq



Disk type Diffuser
Pressure Loss：
150～200mmAq



“Aquablaster”
Pressure Loss：
0



“Aquablaster” can decrease the Energy Consumption by 35% to 45% comparing with the conventional Diffusers because Pressure Loss of “Aquablaster” is almost Zero.

“Aquablaster”: Their initial investment is relatively higher than the conventional Diffusers, but it is reversed within 3–4 years thanks to their low energy consumption, less maintenance and long life of over 10 years.

1. The Installation Example of a factory of Paper Industries

The pictures when exchanging the Tube Type Diffusers

Before

After

1. The Installation Example of a factory of Paper Industries

The problems of Tube Type Diffusers

①The Value of DO is decreased in a half year because of Choking

②Tube type Diffusers unit cost is low, but their exchange expense and work are very cost

③They need to stop of the production during the exchange the Diffusers

After installing “Aquablaster”

①Keep “Aquablaster”s performance over 15 years

②”Aquqblaster”s initial investment is high, but their running cost is very low.

③No need to maintenance of the tank over 10 years

“Aquablaster” solved all the problem.

2. The Installation Example of Tofu(soybean curd) Factory in Japan

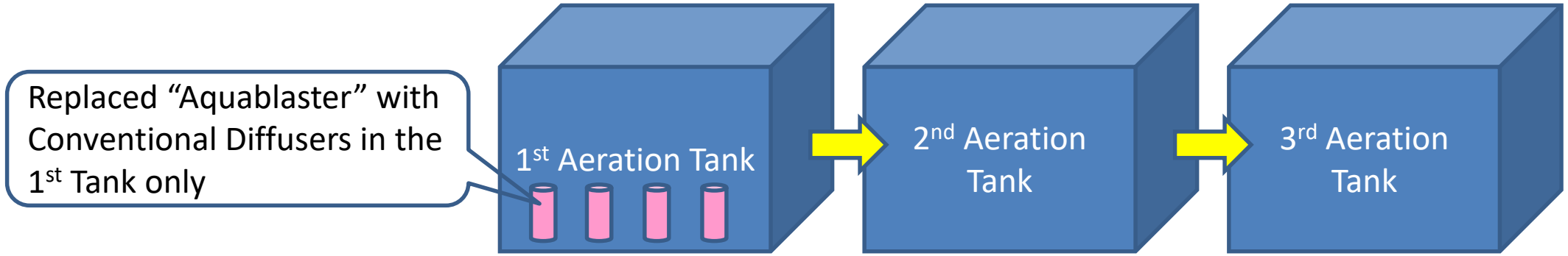
Before

After

Tube type Diffusers:
Units: 304
Air Volume: 40m3/min
(131.5L/min/per unit)

“Aquablaster” Aeration Diffusers:
Units: 54
Air Volume: 40m3/min
(131.5L/min/per unit)

2. The Installation Example of Tofu(soybean curd) Factory in Japan



Item	Per	Average of 28 times testing before Installation	Average of 24 Times testing after Installation	Comparison	Note
BOD Loading	[t/day]	1.79	2.13	**119%**	Production of Tofu was increased by 20%
Sludge Conversion Rate	[%]	54.18	45.17	**83%**	
Aeration Tank①DO	[mg/L]	0.35	0.72	208%	Air Volume was decreased by 14%
Aeration Tank②DO	[mg/L]	0.29	0.65	222%	
Aeration Tank①MLSS	[mg/L]	11979	8514	71%	
Aeration Tank②MLSS	[mg/L]	11668	8496	73%	
Aeration Tank①Air Volume	[m3/min]	40.05	34.64	**86%**	It leads to save electricity consumption
Aeration Tank②Air Volume	[m3/min]	39.71	46.07	116%	Because of Air from 1st Tank
Aeration Tank ①Viscosity	[mPa・S]	15.82	4.65	29%	Increase dehydration rate, and reduce the Sludge
Aeration Tank②Viscosity	[mPa・S]	15.18	4.65	31%	
Ammonium Nitrate	Own Index	3.45	0.07	2%	
Nitrification Nitrate	Own Index	3.47	1.50	43%	
Water Content in Sludge Cake	[%]	84.24	82.17	98%	

2. The Installation Example of Tofu(soybean curd) Factory in Japan

The problems of Tube Type Diffusers

①Low level of Dissolved Oxygen(DO)

②Frequent exchange Diffusers
because of Clogging

③Unstable of Treatment Performance

④Odors from Hydrogen Sulfide,
Methyl Mercaptan, and etc.

After installing “Aquablaster”

①DO average increased: 0.35→0.72

②”Aquablaster” never occurs Clogging
: Ejection Speed 30.1m/sec,
Patented Sludge Breaking Blade

③Keep “Aquablaster”s performance
over 10 years

④No Odors occurs

“Aquablaster” solved all the problem.