

Greatly reduced wastewater treatment costs

*Standard diffusion pipe in the future*

# AQUABLASTER

アキアブラスター

Patent obtained / Patent no.4749961

- Reduced power consumption
- Reduced sludge output
- Zero odor generation
- Adjustment tank as a pre-processing tank
- Powerful stirring inside a tank
- Pressurized flotation unit elimination Sewage discharge without activated sludge

Adopted as an ODA diffusion demonstration project for Viet Nam in 2016

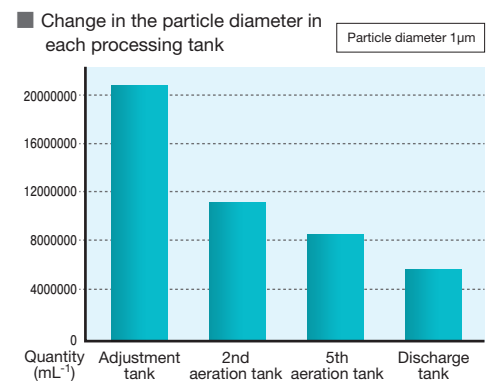
FY2005  
NBK Grand

Prize in the  
Environment and  
Amenities  
category

# Special features of the "Aquablaster"

## Oil content and SS pulverized inside

Swept-up oil content and SS are pulverized by special fins.



\*Data provided by the University of Hyogo

## Nano airbubbles generated

Swirling flows and microscopic air bubbles are generated by making the gas and the liquid collide with the hard blades.

## Sludge on the bottom swept up

An airlift effect sweeps up water and sludge from the bottom for homogenization inside the tank.

## Zero internal pressure loss

Load on the blower becomes smaller, making it possible to greatly reduce power consumption.



Please see the video on the website.

# Aquablaster makes a difference compared to other diffusion pipes! Six features of Aquablaster

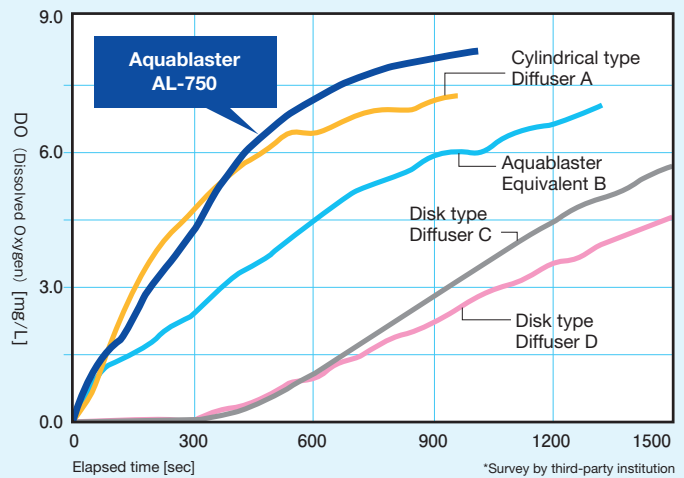
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## Outstanding oxygen dissolution power

Even compared to products of other manufacturers in this category, the top level of oxygen dissolution power is promised.

\*Levels of oxygen dissolution efficiency that have been open to the public cannot be used as indicators in comparison because of the lack of definite measurement criteria.

■ Comparison of dissolved oxygen concentration trends



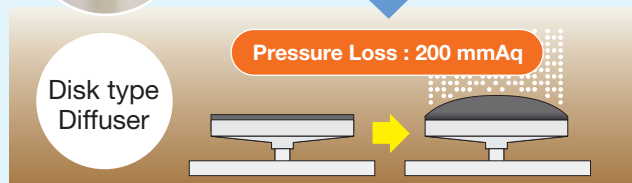
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## Reduced cost of electricity by Pressure Loss

Aquablaster with zero pressure loss has an energy-saving effect which consumes less electrical power than other diffusers.



When Pressure Loss of Aquablaster is 0.00 mmAq



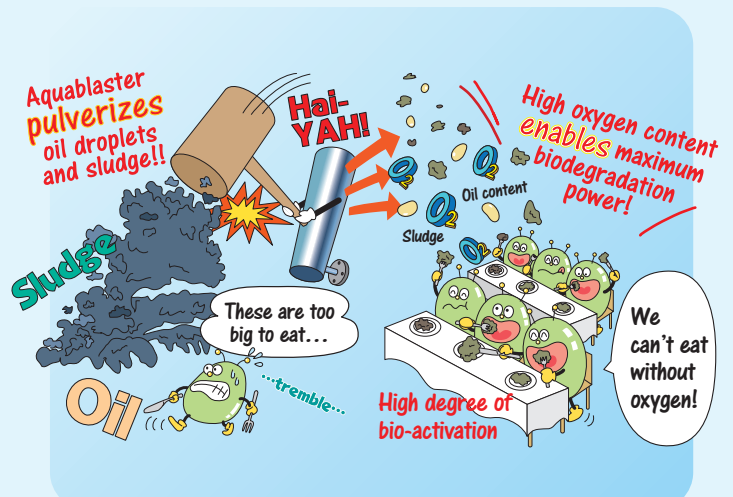
\*The Aq in mmAq is water. 700mmAq means extra power requires to reach + 70 cm water depth.

3

## Reduced sludge output

Sludge output is reduced because SS and oil content are pulverized into particles small enough for microorganisms to eat easily.

\*Pulverization of sludge is prevented by adjusting the air volume.



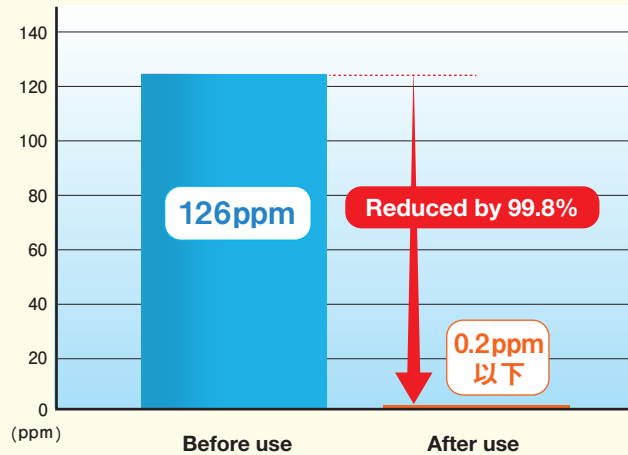
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## Guarantee of zero odor generation

Microorganisms are made to perform full aerobic respiration metabolism so that no odor such as hydrogen sulfide is generated.

\*Limited to the installations designed by Aience.

■ Hydrogen sulfide concentration



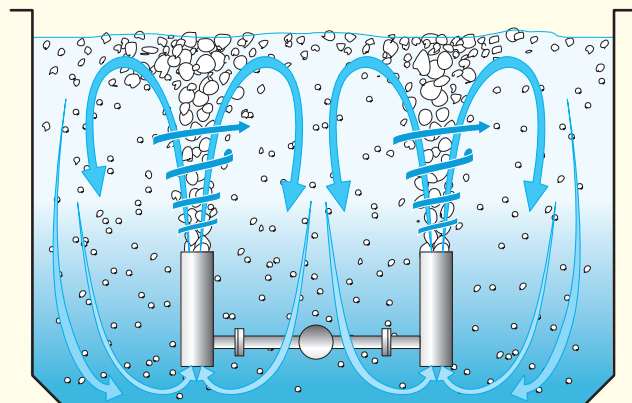
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## Powerful stirring inside a tank

Sludge on the bottom is swept up and its accumulation is prevented to eliminate anaerobic areas.

( Such a substance as silica and calcium is also prevented from settling. )

Microscopic bubbles spread throughout the water tank

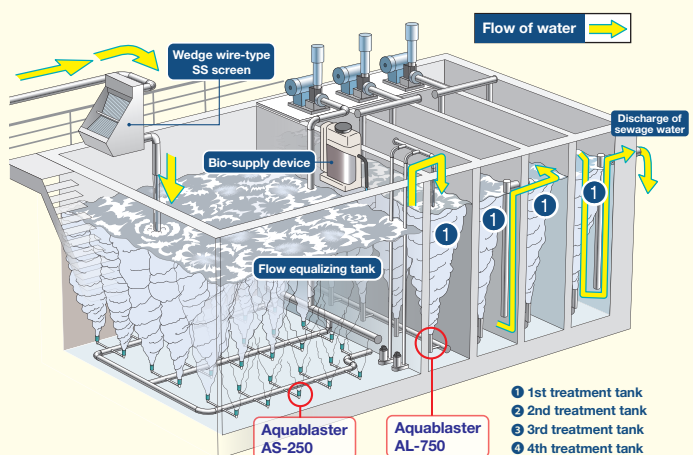


6

## AIS, which realizes pressurized flotation unit elimination and sewage discharge without activated sludge

If a tank in which pre-processing can be performed by Aquablaster is available, it is also possible to eliminate pressurized flotation.

■ Basic flow diagram / Sewage water discharge



# Mechanism of Treatment

A special aeration Aquablaster crushes the organic substances and **activates perfect aerobic respiration metabolism.**

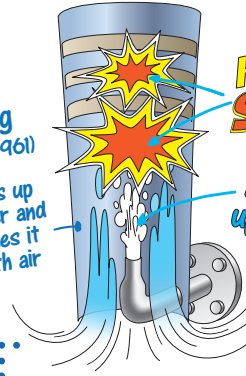
1

Patented special wing (Patent no.4749961)

Lifts up water and mixes it with air

**KER-SMASH!!**

At speeds of up to 100km/h



2

Aquablaster pulverizes oil droplets and sludge!!

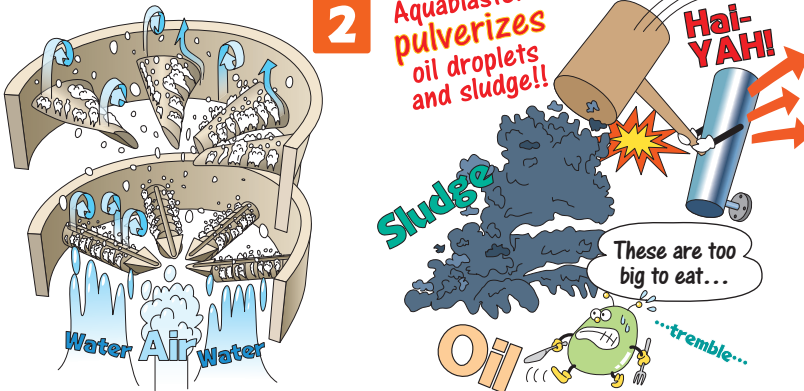
**Hal-YAH!**

**Sludge**

These are too big to eat...

**Oil**

...tremble...



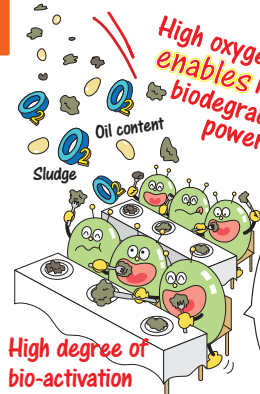
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High oxygen content enables maximum biodegradation power!

Oil content  
Sludge

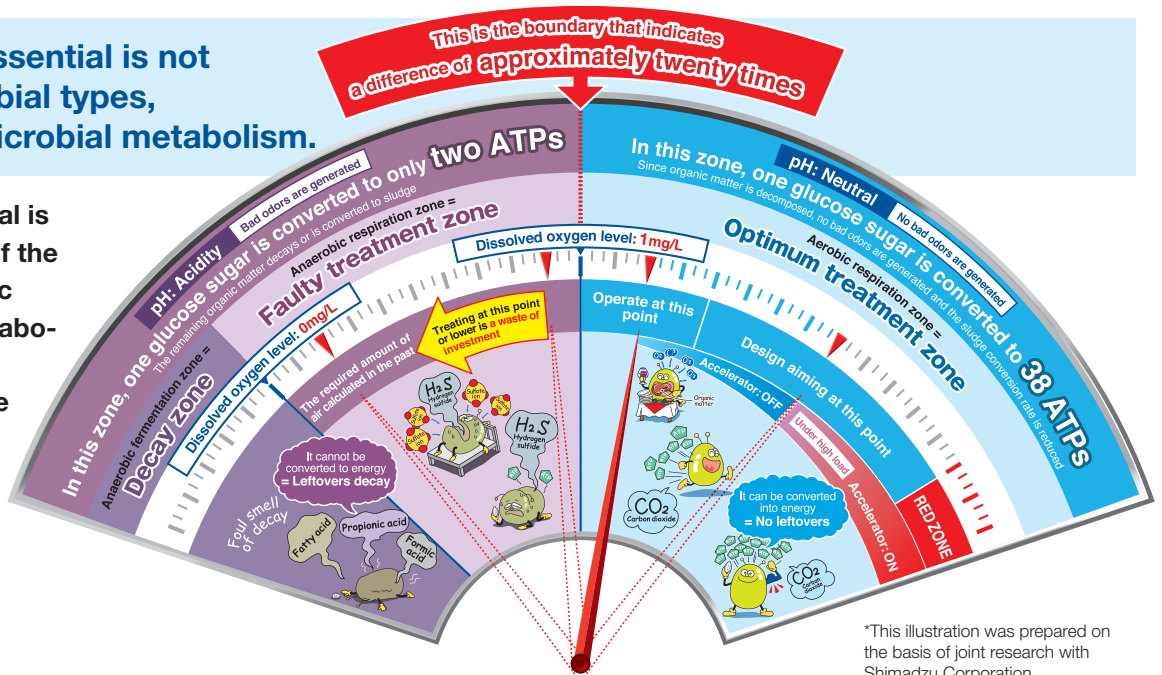
We can't eat without oxygen!

High degree of bio-activation



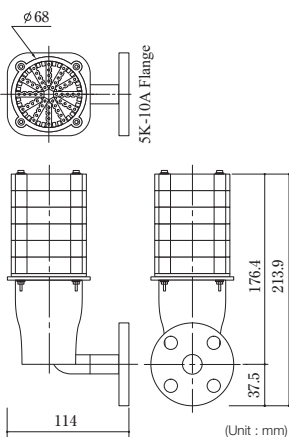
What is essential is not the microbial types, but the microbial metabolism.

What is essential is the activation of the "Perfect aerobic respiration metabolism" that can convert glucose into 38 ATPs.

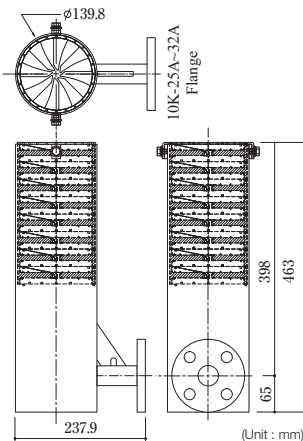


\*This illustration was prepared on the basis of joint research with Shimadzu Corporation.

## AS Series diagram



## AL Series diagram

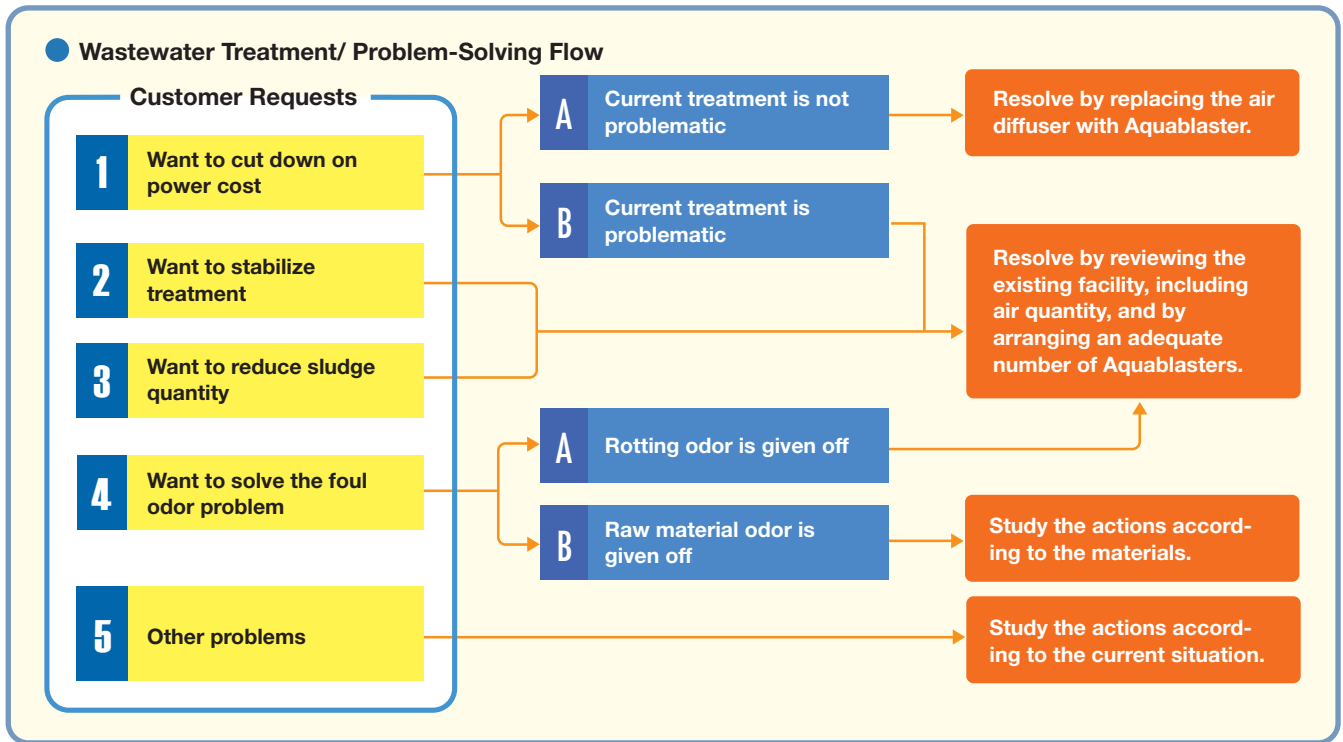


## Specification table

Product name	Part number	Applied air volume	Size	Connecting part
Aqua blaster	AS-250	175~275L/min	W114xH213.9	5K-10AFlange
	AL-750	600~900L/min	W237.9x463	10K-25AFlange
	AL-1100	900~1300L/min	W237.9x463	10K-25AFlange
	AL-1500	1300~1700L/min	W237.9x463	10K-32AFlange

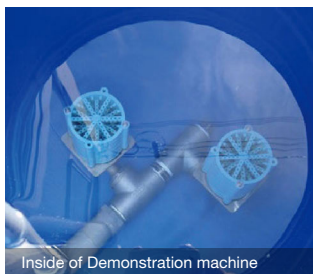
\*Air volume can be adjusted or unit produced to custom specifications. Do not hesitate to consult Aience!

# ■ Aquablaster will solve the various problems of wastewater treatment!



■ We will offer further detailed suggestions if we receive your information on current situations.

Validation items		
Degree of necessity	Information to be prepared	Suggestion details
YES	Tank Size ( L x W x Water Level )	Submission of a preliminary layout plan and an approximate estimation.
MAYBE	Current treated water quantity	Review of the current treatment airflow
MAYBE	Drawings of tanks	Preparation of a precise layout plan drawing
MAYBE	Current water quality	Reference case examples of layout plan
MAYBE	Treatment flow diagram	Suggestions on sludge/chemicals reduction, etc.
MAYBE	Other specification documents, etc.	Validation of details
MAYBE	Current treatment cost	Estimation of cost-benefit performance



## ■ Lend a demonstration machine.

Only to prepare 90L of wastewater and a 100V power source.

Validation items	Raw water	12 hr. treatment	24 hr. treatment	36 hr. treatment	48 hr. treatment
Degree of necessity	YES	MAYBE	YES	MAYBE	YES

\*Five fundamental measuring items: BOD, COD, SS, n-hex and PH

■ Manufacturer



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