

Industrial circulating
water purification
system

SLUDGE EATER

[Patent pending] Patent application number: 2002-240820

BIO REMEDIATION SYSTEM

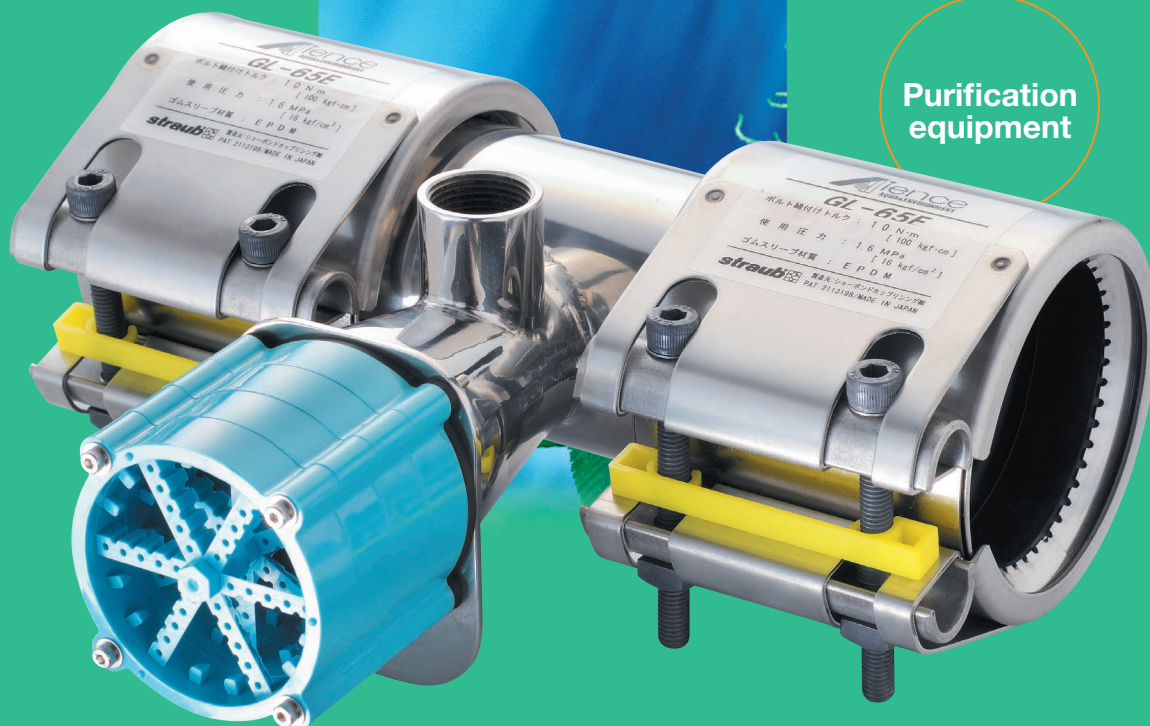
Special aeration and
biopower resolve
problems, such as
water deterioration
and rotting odors.

Aience's "BIO Environmental Improvement System"
makes use of natural organisms to restore the
irreplaceable environment, which continues to be
threatened by a host of dangers.
With state-of-the-art technology as our foundation,
we strive to protect the beauty of the Earth and
clean up all types of pollution to
create a brighter future for our children.

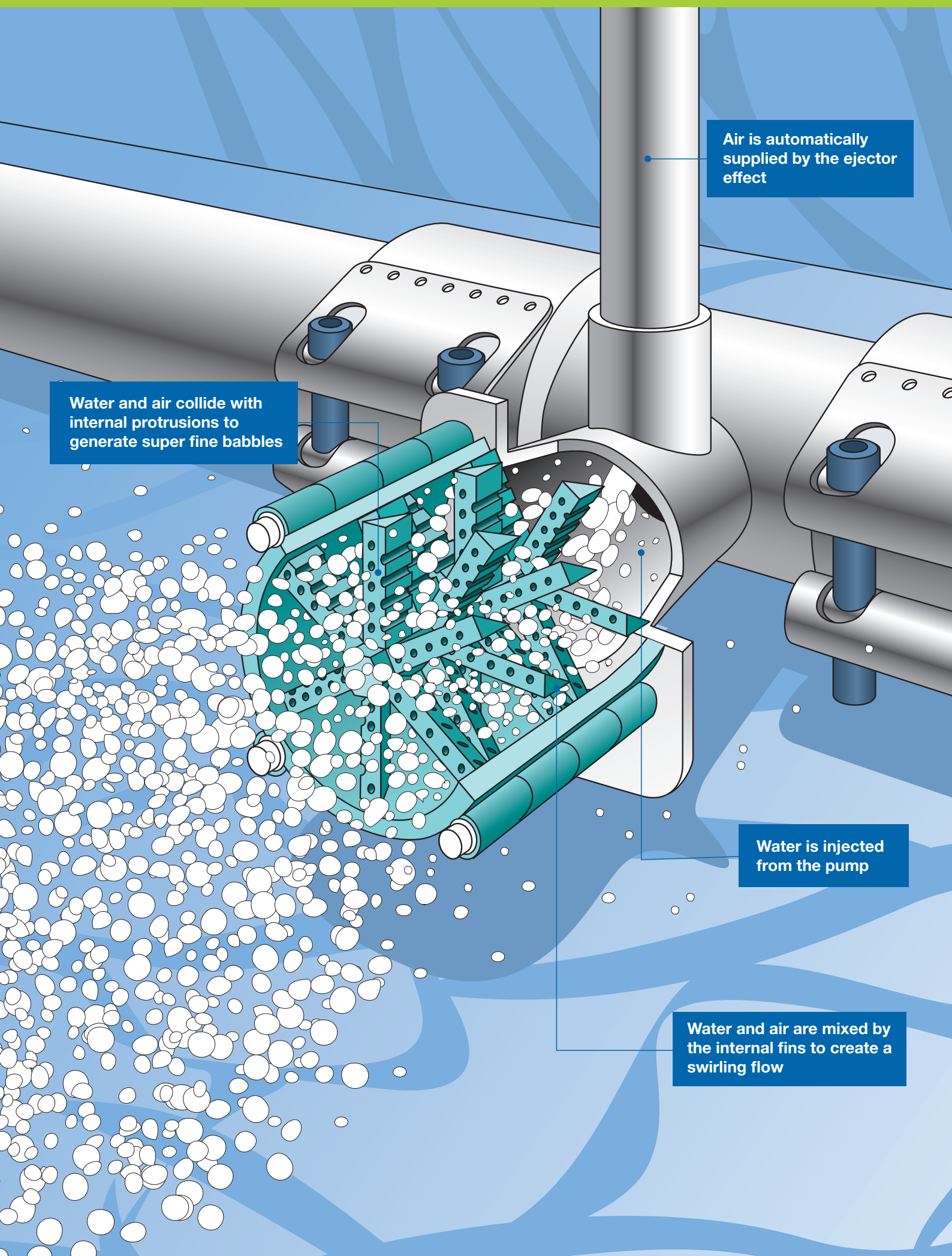
The NBK
grand prize
in FY 2005

Winning of environment
and amenity category
award

Purification
equipment



SLUDGE EATER



Air is automatically supplied by the ejector effect

Water and air collide with internal protrusions to generate super fine bubbles

Water is injected from the pump

Water and air are mixed by the internal fins to create a swirling flow

Powerful combination of aeration and biomass.

● Resolution of various problems of circulating water!

■ Reduction in odors

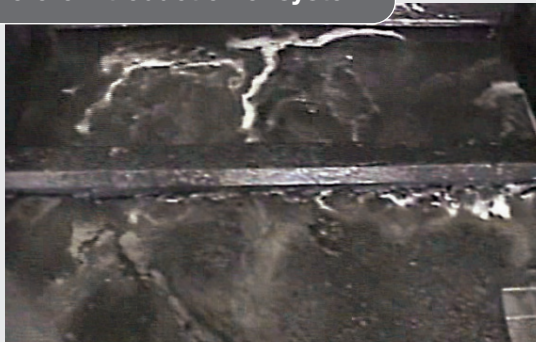
■ Tack-free sludge

■ Reduction in weight of sludge

■ Recycling of circulating water

Achieving reduction in odors specific to paint booths, as well as a reduction in the weight of paint residue! The operation of Aience-specific special aerator and the biohyper allows the circulating water tank to be effectively improved for cleaning. With adaptation to various water washing paint booths, this circulating water purification system reduces the number of times of the water replacement and cleaning and facilitates the acquisition or update of ISO certification.

Before introduction of system



- Suffering from rotting odor of water!
- A large amount of sludge accumulated on the bottom of pit!
- A high viscosity of sludge makes the cleaning difficult!
- High maintenance and operation cost, such as wastewater collection cost!

BEFORE

Paint sludge
before introduction



After introduction of system



- No rotting odor!
- A significant reduction in sludge in the pit!
- A reduction in viscosity of the sludge made cleaning easy!
- The number of times the circulating water was replaced decreased!

AFTER

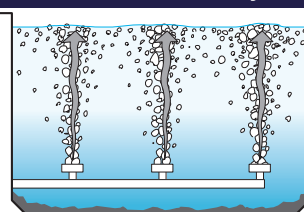
Paint sludge
after introduction



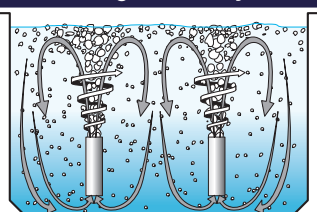
■ The point in wastewater purification is the circulating aeration

It is an important point in maintenance of the environment for the circulating water tank that aerobic bacteria should be activated efficiently. Adopting a special circulating aeration in the wastewater tank allows degradation and purification to be performed efficiently at high speed.

Conventional aeration system

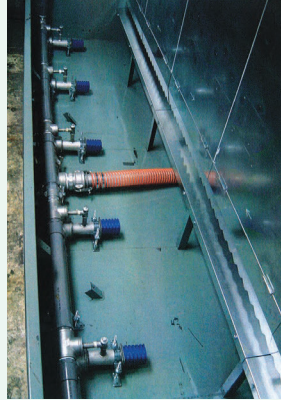


Circulating aeration system

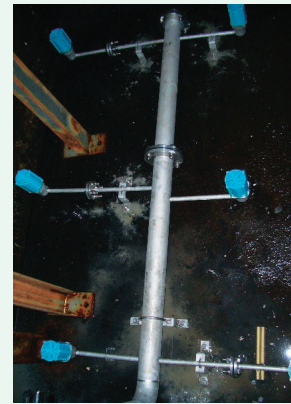


■ Introduction example

■ Paint booth circulating water



■ Shower tester circulating water



- Paint circulating water treatment
- Cleaning circulating water treatment
- Cooling circulating water treatment
- Wastewater recycling treatment, etc

■ Aience demonstrates professionalism in wastewater treatment.

It is often heard that a company **“failed in purification of circulating water...”**

That is because they initiated wastewater treatment without knowing the fundamentals of the process. Please leave it to Aience; we achieved treatment results.



■ Kawasaki Food Industry Co., Ltd.
200m³/day Food processing wastewater treatment facility
Succeeded in cost reduction of eight million JPY a year



■ Kawasaki Food Industry Co., Ltd.
Scene of wastewater treatment facility construction
Seven 40m³ unit tanks



■ Hotel Okura Kobe
150m³/day Kitchen wastewater treatment facility
Succeeded in cost reduction of 15 million JPY a year



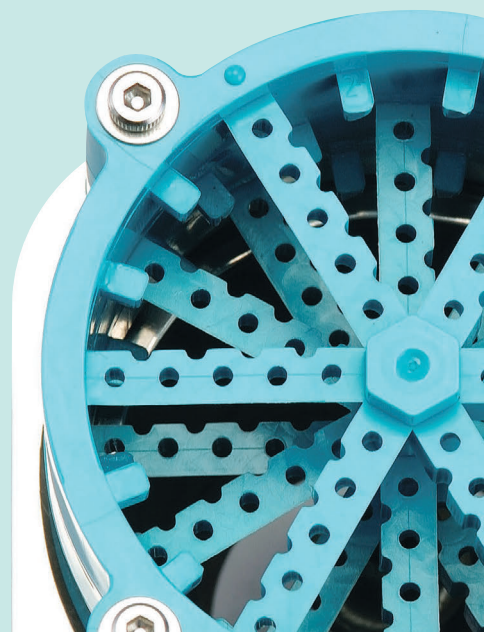
■ Nikko Co., Ltd.
10m³/day Industrial wastewater treatment facility
Succeeded in stable treatment of wastewater with high load and high fluctuation



■ Shimadzu Corporation
10m³/day Kitchen wastewater treatment facility
Cleaning water containing mineral oil is treated simultaneously



■ Kyokuto Kaihatsu Kogyo Co., Ltd.
50m³/day Mineral oil effluent treatment facility
Release of highly concentrated mineral oil is also stopped



Circulating water treatment system

It is not necessary to input biomass, except during the early stage of operation and when replacing the circulating water.

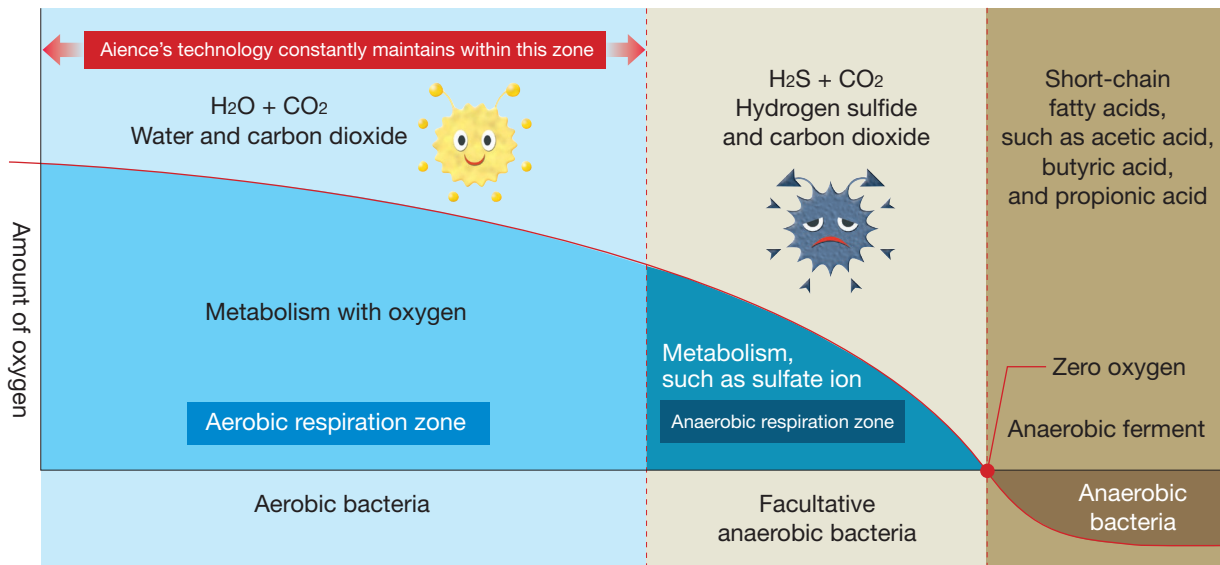


Various types of microorganisms inhabit the circulating water pit. The activity of aerobic bacteria among them is activated.

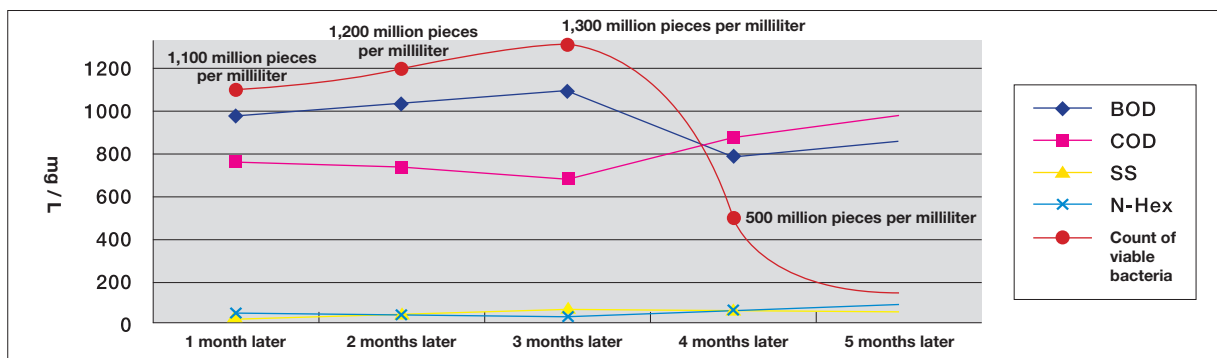
Dissolved oxygen activating biomass is prepared.

Fine bubbles are generated by a special diffusion method, which increases the oxygen concentration in the tank. Distributing oxygen will support the biomass aerobic respiration to bring out metabolism and degradation capability to the maximum extent.

● Difference in biomass types and metabolism When volume of oxygen falls below a level ...



Transition of circulating water quality (reference actual values)



	1 month later	2 month later	3 month later	4 month later	5 month later
BOD	990	1050	1100	780	870
COD	740	720	680	870	980
SS	9	35	51	42	36
N-Hex	18	22	25	37	57

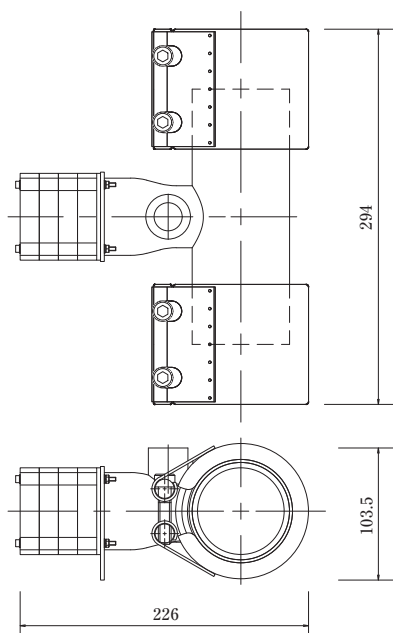
(in units of mg / L)

It is appropriate to replace the circulating water before the vales of COD and that of BOD are reversed. When the value of COD exceeds that of BOD, an activator must be input.

Standard specification of sludge eater

Sludge Eater in the case where the water depth is shallow (600 mm or less)

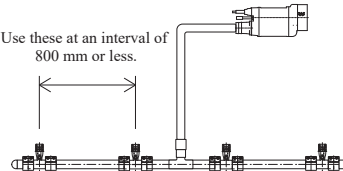
Detailed view of Sludge Eater



Installation view of Sludge Eater

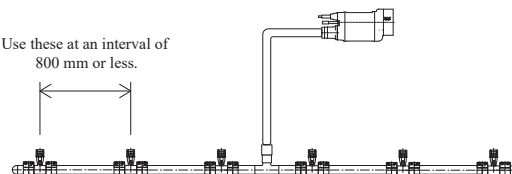
●SE-04


Use these at an interval of 800 mm or less.



●SE-06

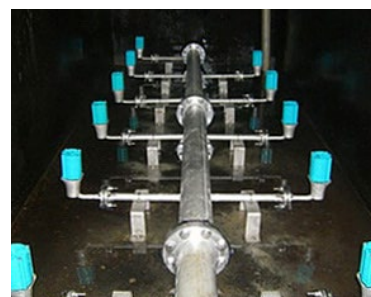
Use these at an interval of 800 mm or less.





	Model	Pump
	SE-04	3.0kw
	SE-06	3.7kw

Aquablaster in the case where the water depth is deep (over 600 mm)

Detailed view of Aquablaster



	Part number	Adaptive airflow
	AS-250	175~275L/min
	Part number	Adaptive airflow
	AL-750	600~900L/min
	AL-1100	900~1300L/min
	AL-1500	1300~1700L/min

For air quantity and layout design, contact Aience.

■ Manufacturer



Aience Inc.

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