

Space saving type

High load aerobic wastewater treatment equipment

Depcer



Creating Human Life - Life with Water -

Aiken Kakoki K.K.

ISO14001 · Kyoto Protocol (CO₂ reduction)

London Convention · Cogeneration correspondence

Depcer O₂ Pure oxygen activated sludge method Advanced treatment purification system using pure oxygen

Pure oxygen activated sludge treatment system “Depcer O₂” is...

There are a variety of treatment methods for industrial wastewater treatment.

Activated sludge method has been adopted for wastewater treatment of mainly organic matter of food industry, etc. Activated sludge method requires oxygen, but it requires a large amount of air because oxygen concentration in the air is only 21%. In addition, high load treatment and high concentration treatment was difficult because oxygen concentration and oxygen absorption efficiency is low.

In contrast, Depcer O₂ increase oxygen absorption efficiency by using pure oxygen instead of air and will be able to keep high dissolved oxygen (DO). Depcer O₂ activate microorganisms in aeration tank and increase the purification capacity.

1. Characteristics

POINT 1 ▶ It is possible to easily install by simply adding to the existing treatment equipment.

POINT 2 ▶ It is possible to construct while operating the existing treatment equipment.

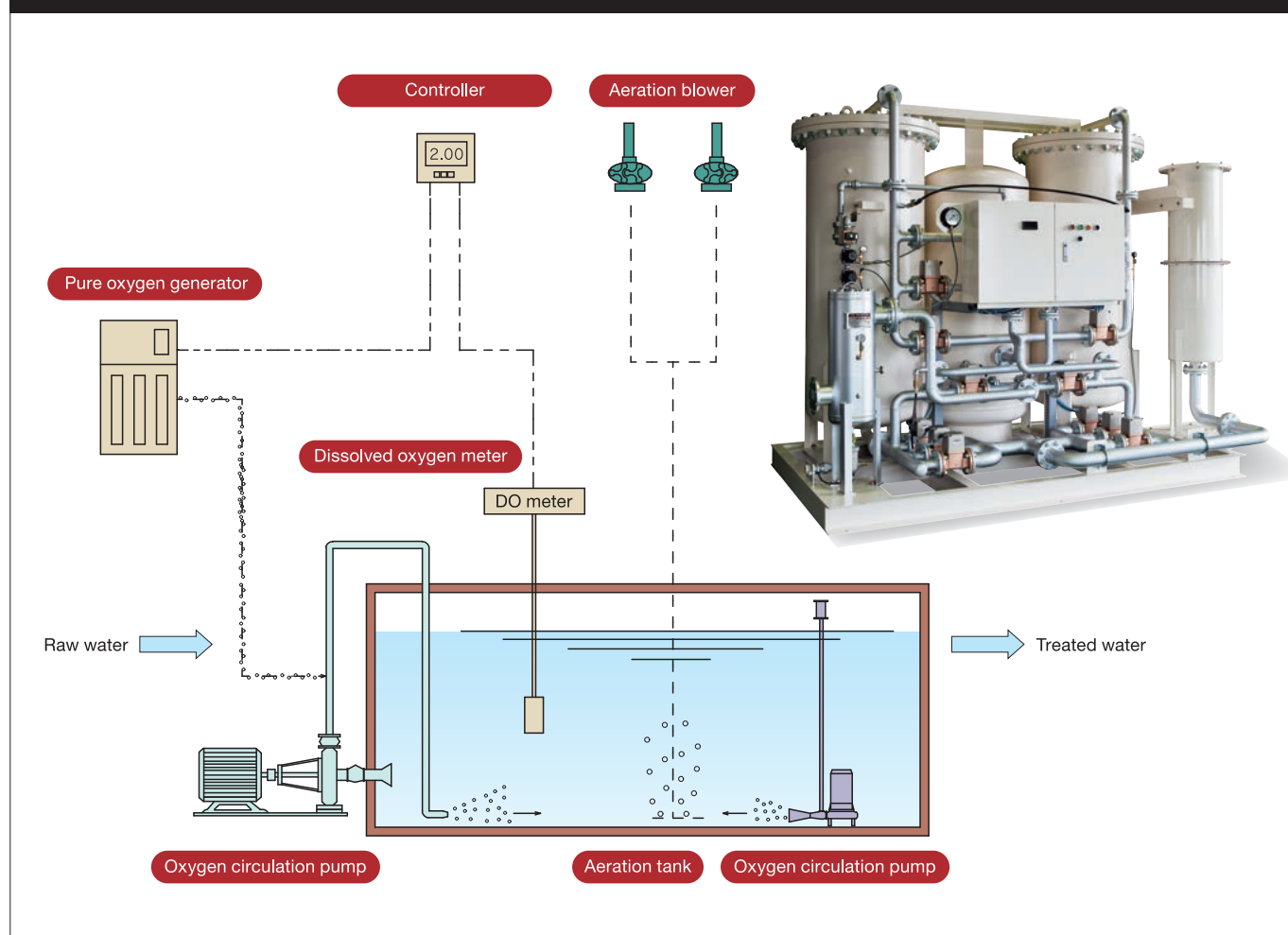
POINT 3 ▶ It performs automatic control operation by dissolved oxygen meter.

POINT 4 ▶ There is no bad smell from the aeration tank due to oxygen deficiency.

2. Merits of Depcer O₂

- | | |
|---|--|
| 1 | Treatment capacity become 5-10 times higher than the standard activated sludge method. |
| 2 | It can be high concentration treatment..... It can operate with high sludge load. |
| 3 | It strong to load fluctuation because it can keep high DO. |
| 4 | It improves the properties of settling and dehydrating because aggregation properties of sludge becomes well. |
| 5 | Sludge generation rate is reduced to 50-60% of the air method. |
| 6 | Site area is reduced because it can secure a big volume load. |
| 7 | It is 20 times treatment capacity as compared to conventional treatment method by using in combination with anaerobic treatment (EGSB) in the preceding stage. |

Flow sheet



Comparison of pure oxygen method and air method

	Pure oxygen method	Air method
BOD volume load (kg/m ³ · day)	2.0—5.0	0.3—1.0
BOD sludge load (kg/kg · day)	0.4—0.7	0.1—0.3
MLSS operation concentration (mg/ℓ)	6,000—10,000	3,000—6,000
SVI	50—150	100—200
Sludge generation rate (%)	20—40	40—60

Quality of treated water (quality of treated water associated with Depcer O₂ installation) (Agricultural products processing drainage)

	Depcer O ₂	
	Raw water	Treated water
BOD (mg/ℓ)	2,100	10 or less
COD _{mn} (mg/ℓ)	1,585	10 or less
SS (mg/ℓ)	150	10 or less

Adaptation example

It can be applied to various types of organic wastewater.

Food processing wastewater
Beverage production wastewater
Fermentation and brewing wastewater
Pharmaceutical industry wastewater
Scouring and dyeing wastewater
Oils and fats industry wastewater
Textile industry wastewater
Other wastewater

Depcer Fixed Bed

Depcer FB Aerobic fixed bed method

Fixed bed biological membrane treatment system

Fixed bed biological membrane treatment system is a way to treat wastewater by the action of microorganisms fixed to the surface of fixed bed filter medium. Fixed microorganisms decompose pollution components in wastewater under aerobic condition. We will select the best one to suit the wastewater by the test evaluation, etc. because there are fixed bed filter mediums of various types. Please consult us as a response to the increase of wastewater amount and the changes of water quality by increased production and so on.

1

High load biological treatment is possible

It is effective to load fluctuation because it can hold high sludge concentration of biological treatment tank.

2

Space saving

It can space saving because BOD volume load is large.

3

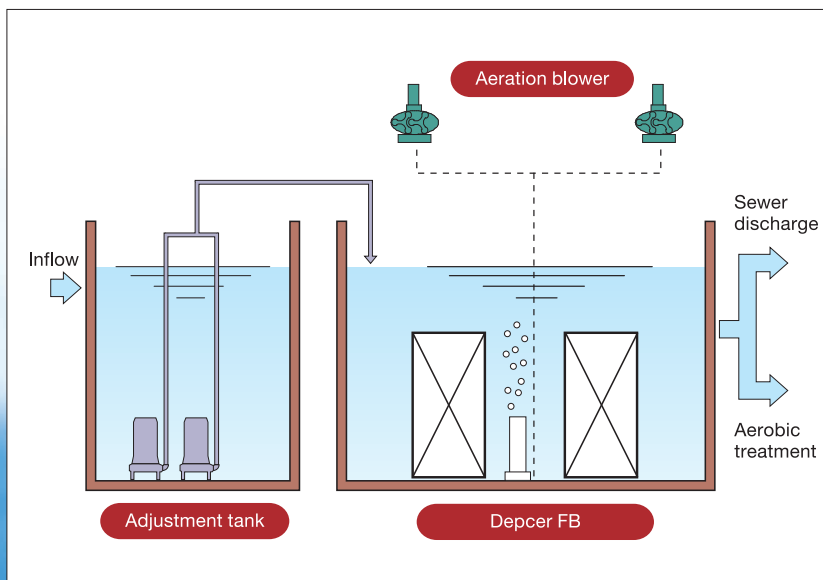
Maintenance management is easy

Management is easy because the useful life of fixed bed filter medium is long and there is almost no exchange frequency.

4

Remodeling can be applied

It encourages the enhancement of treatment capacity by adding fixed bed filter medium to the existing water treatment equipment.



Shape and size is, one bundle is extra fine filaments of diameter 12 microns, 70,000 pieces of the bundle.
The way attached microorganisms is nest of ball-shaped that tangled in complex and strong.

Depcer SB Aerobic sponge bed method

Sponge bed biological treatment system

Sponge bed biological treatment system can obtain stable treated water quality by high activity microorganisms membrane formed on the carrier surface. We will select the best one to suit the wastewater by the test evaluation, etc. because there are sponge bed filter mediums of various types. Please consult us as a response to the increase of wastewater amount and the changes of water quality by increased production and so on.

1

High load biological treatment is possible

It is effective to load fluctuation because it can hold high sludge concentration of biological treatment tank.

2

Space saving

It can space saving because BOD volume load is large.

3

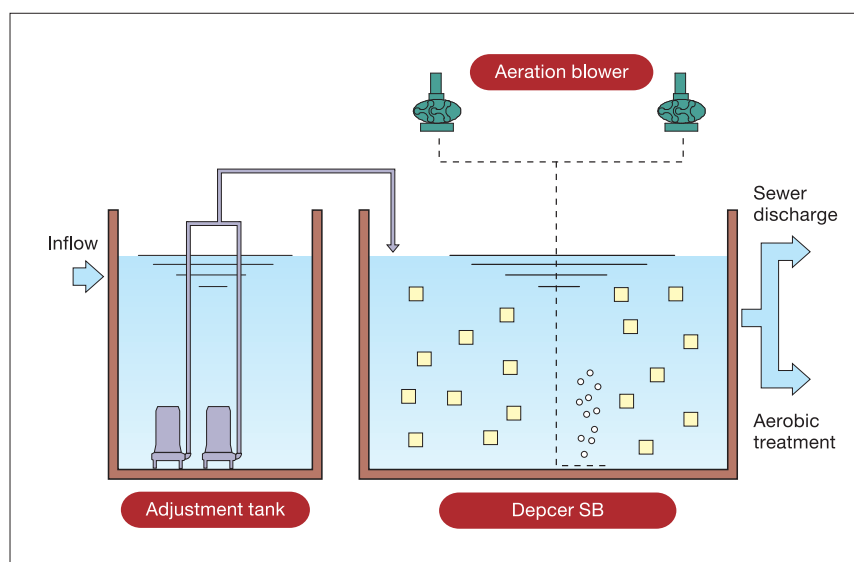
Maintenance management is easy

Adjustment of aeration air volume, etc. become necessary, but the special adjustment in daily maintenance is unnecessary.

4

Remodeling can be applied

It encourages the enhancement of treatment capacity by adding sponge bed filter medium to the existing water treatment equipment.



It can be fixed microorganisms in high concentration because the main material is ether based polyurethane and it is strong to hydrophilic biological affinity. In addition, the specific surface areas become larger than conventional ones.

Microorganisms are possible to decompose oils and fats taking the time by oils and fats absorption action of the carrier.

Comparison table of Depcer Fixed Bed and Depcer Sponge Bed (Comparison: Activated sludge method)

	Fixed Bed (FB)	Sponge Bed (SB)	Activated sludge method (Floating type)
BOD volume load ($\text{kg}/\text{m}^3 \cdot \text{day}$)	1.0-5.0	1.0-2.0	0.3-1.0
MLSS operation concentration (mg/ℓ)	20000	10000	6000
Hardly decomposable substance	○	△	×
Sludge generation rate (%)	10	20	40
Site area	Small	Medium	Large

Depcer MS Membrane separation activated sludge method

Membrane separation activated sludge treatment system that support low cost and space saving and advancement of treated water

Membrane separation activated sludge treatment system is carried out the separation process of activated sludge and treated water in conventional activated sludge method treatment by membrane filtration, and is a system that achieves reliably solid-liquid separation. In addition, it is space saving and low cost, easy to maintenance management, and is industrial wastewater treatment system that achieves to ensure advanced treated water quality. We will select the best one to suit the wastewater by the test evaluation, etc. because there are membranes of various types. Please consult us as a response to the increase of wastewater amount and the changes of water quality by increased production and so on.

1

Maintenance management is easy

Maintenance management is easy because settling management of sludge is unnecessary, distant monitoring is also possible.

Inspection and management is easy because element of large membrane area are modularized.

It contributes to the reduction of bulking.

2

Space saving

Settling tank is unnecessary because performing the solid-liquid separation by membrane.

Treatment time is short and it is possible to downsizing equipment.

Concentration tank is unnecessary because excess sludge is high concentration and can directly dehydration.

3

Low cost

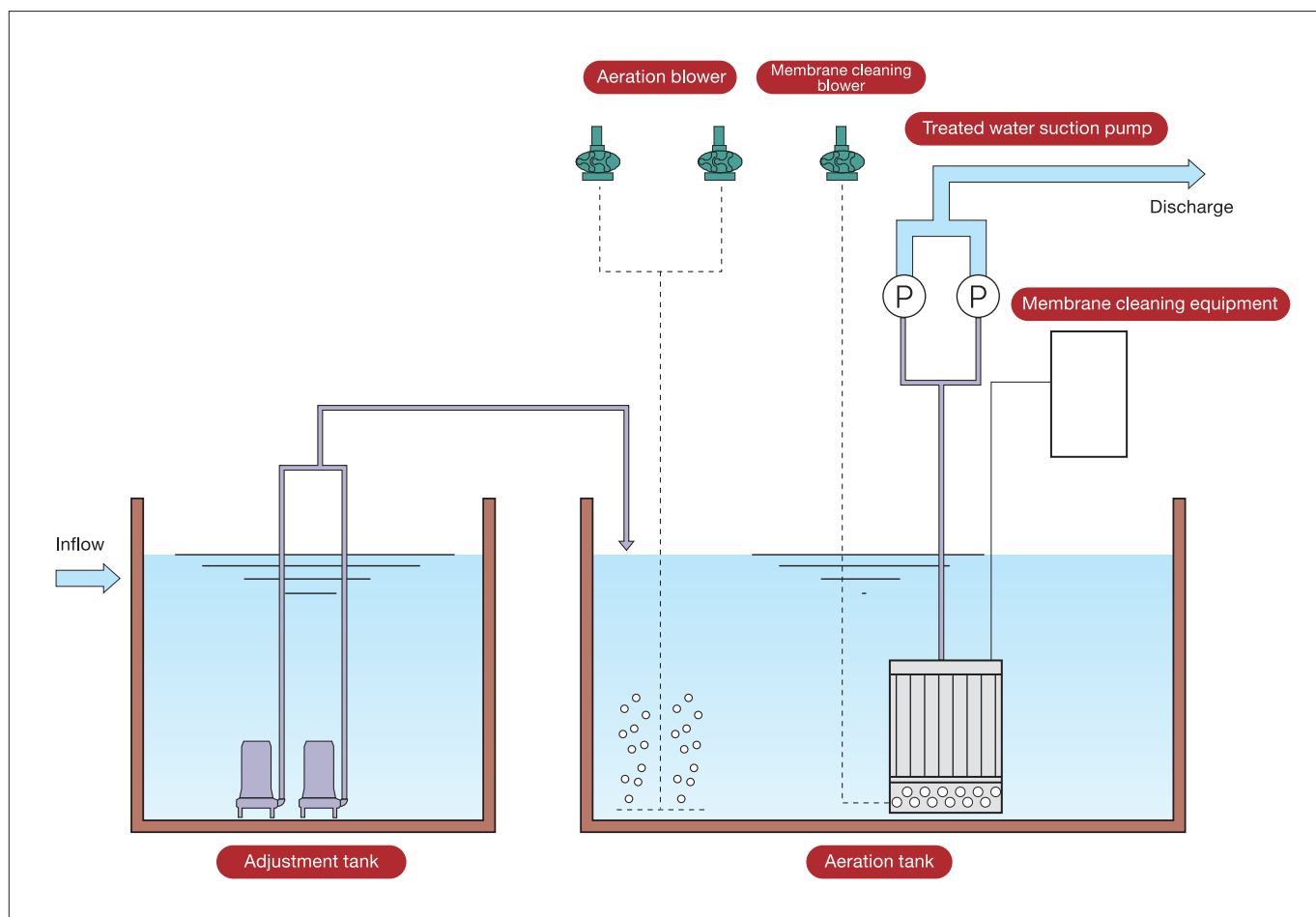
Initial cost become cheaper because simple and compact construction.

It contributes to the disposal cost reduction because excess sludge generation amount is less.

4

High quality treated water

It encourages the enhancement of treatment capacity by adding membrane separation activated sludge treatment system to the existing water treatment equipment.



Corporate name: Aiken Kakoki K.K.
President: Masanori Iwata
Main Office: 353-6, Komura-machi, Matsuyama-shi, Ehime, JAPAN
Phone: (+81) 89-963-4611
Fax: (+81) 89-963-4655
Office: Ho Chi Minh City, Vietnam

Machine and Equipment Installation Works (Standard-18 No. 9136)
Piping Works (Standard-18 No. 9136)
Business conducting general sales of poisonous and deleterious substances No. 265

Agents: Fukuoka/Wakayama/Nagoya/Kanagawa/Hiroshima
History: Founded on October 2, 1982
Established on June 17, 1983
Increased capital on March 28, 1996

Service companies

ANLET Co., Ltd. (Shikoku Service Center)
TACMINA CORPORATION..... (Shikoku Service Center)
Kurita Water Industries Ltd..... (Special agent)
Tsurumi Manufacturing Co., Ltd..... (Service center)

Main banks

Iyo Bank and Ehime Bank and Mizuho Bank



Aiken Kakoki K.K.

[Main Office] 353-6, Komura-machi, Matsuyama-shi, Ehime, 791-1125 JAPAN

Business

Design and construction of wastewater treatment equipment

Design and construction of tap water/utility water treatment equipment

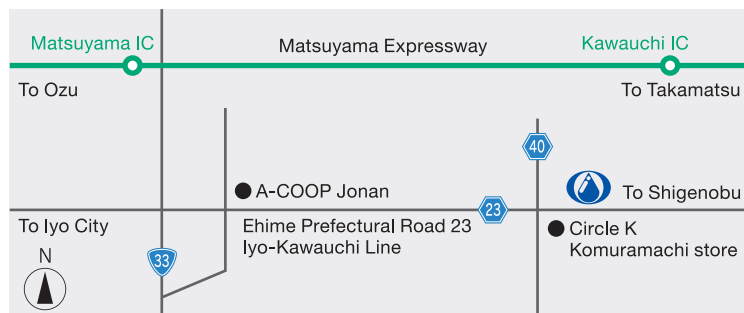
Design and construction of refrigeration air conditioners and circulation cooling-water treatment equipment

Inspection and maintenance of various types of water treatment equipment

Inspection and maintenance of industrial machines

Industrial instruments and analytical equipment

Various water treatment chemicals



<http://www.aiken-h2o.com/>