Kansai-Asia Environmental and Energy Saving Business Promotion Forum
（Team　E-Kansai）
Members Technologies and Products

Team E-Kansai

経済産業省
近畿経済産業局
METI KANSAI

November 2016

Example: WaterTreatment | Air Treatment | Soil Treamtment | Waste Treatment/Recycle | Energy Saving | Other

INDEX

	企業名	技術名	Company Name	Name of Product / Technology
1	朝日化工株式会社	用水処理(水処理)設備の設計施工ほか	Asahi Chemical & Industrial Co.,Ltd.	Design and Construction of water treatment facilities
2	株式会社アナテック・ヤナコ	オンラインVOC自動測定装置EHF−770V	Anatec Yanaco Corporation	Online Automatic VOC Analyzer
3	小木曽建築有限会社	体型有機廃水処理「KIDS」ポータブルRO浄水機	Ogiso Kentiku Co., Ltd.	Wastewater Treatment [KIDS] Water Treatnebt [RO] unit
4	オプテックス株式会社	WATER it	OPTEX CO., LTD	WATER it
5	関西オートメイション株式会社	ダストモニター	Kansai Automation Co., Ltd.	Electrodynamic Dust Emission Monitoring System
6	一般財団法人関西環境管理技術センター	総合環境調査・環境保全ソリューション	General Incorporated Foundation EMATEC	Integrated Environmental Solutions
7	株式会社クボタ	クボタの水・環境関連製品	Kubota Corporation	Water Environment related products of KUBOTA
8	クラレケミカル株式会社	活性炭・高機能炭素材	KURARAY CHEMICAL CO., LTD.	High Performance Activated Carbons
9	株式会社クレハ環境	流動層吸着式VOC回収・脱臭装置　GASTAK	Kureha Ecology Management Co., Ltd.	VOC Treatment GASTAK
10	株式会社クロセ	汚泥用スパイラル式熱交換器	Kurose Chemical Equipment Co.,Ltd.	Spiral heat exchanger for waste water
11	株式会社サニコン	浄水膜処理技術、排水処理余剰汚泥減容	SANICON CO.LTD	Water purification, Wastewater treatment Technology
12	JFEアドバンテック株式会社	上下水道設備における計測機器	JFE Advantech Co., Ltd.	Intrumentations in water and sewarage facilities
13	Jトップ株式会社	自動再生式活性炭排水処理技術	JTOP Co., Ltd.	Regenerating Activated Carbon Wastewater Purification System
14	株式会社島川製作所	パッケージ型VOC排気触媒燃焼浄化装置	Shimakawa Seisakusyo　Co., Ltd.	Packaged VOC Catalytic Combustion Machine
15	神鋼環境ソリューション	N/A	Kobelco Eco-Solutions Co., Ltd.	AFS (AUTO SIPHON FILTER)
16	新明和工業株式会社	水中ミキサ	ShinMaywa Industries, Ltd.	Submersible mixer Series
17	鈴木産業株式会社	エアレータ　S1	Suzuki Sangyo Co., Ltd.	AERATOR S-1

Example: WaterTreatment Air Treatment Soil Treamtment Waste Treatment/Recycle Energy Saving Other

INDEX

	企業名	技術名	Company Name	Name of Product / Technology
18	積水アクアシステム株式会社	立体格子状接触体エスローテ	Sekisui Aqua Systems Co., Ltd.	Cubic Latticed Contactor ESROTAE
19	ダイネン株式会社	活性炭を用いた環境浄化対策	Dainen Co., Ltd.	Environmental purification countermeasure using Activated carbon
20	大和化学工業株式会社	減圧脱水乾燥装置　Take-減	Daiwa Chemical Industry Co., Ltd.	Decompression-Dehydration-Drying Device　Take-GEN
21	テイエルブイ・インターナショナル株式会社	省エネルギー型スチームトラップ　SS1シリーズ	TLV Co., Ltd.	Energy -Saving Free Float Steam Trap SS1 Series
22	東洋スクリーン工業株式会社	傾斜式固液分離装置「ウルトラTNスクリーン」	Toyo Screen Kogyo Co.,Ltd.	Inclined Solid-Liquid Separating Screen
23	東洋紡エンジニアリング株式会社	中空糸RO膜海水淡水化装置	Toyobo Engineering Co., Ltd.	Hollow Fiber RO Seawater Desalination System
24	株式会社ナガオカ	超高速無薬注生物処理装置「CHEMILES」	Nagaoka International Corp.	Chemical-less Groundwater Treatment System "CHEMILES"
25	日機装エイコー株式会社	モノフレックスポンプ	Nikkiso Eiko Co., Ltd.	MONOFLEX Pump
26	株式会社日建設計シビル	日本の環境・防災技術を取り入れた都市計画	Nikken Sekkei Civil Engineering Ltd.	Urban Planning, adopting environmental and disaster prevention technology of Japan
27	ネクストエナジー・アンド・リソース株式会社	太陽光及びバイオガス活用によるハイブリッド型再生可能エネルギー発電	Next Energy & Resources Co., Ltd.	Hybrid Biogas and PVSolar Power Renewable Power Generation Project
28	HACK INETERNATIONAL Co.,Ltd.	超微細気泡生成装置 & Clewa	Hack International Co.,Ltd.	Ultra Fine Bubble Generator & Clewa
29	パナソニック環境エンジニアリング株式会社	環境エンジニアリング事業	Panasonic Environmental Sytems & Engineering Co., Ltd.	Environmental Sytems & Engineering
30	阪神動力機械株式会社	水中機械式曝気撹拌装置「アクアレータ」	Hanshin Engineering Co.,Ltd.	Submerged Mechanical Aerator/Agitatior "AQUARATOR"
31	日立造船株式会社	高速繊維ろ過装置　まりも	Hitachi Zosen Corporation	High-rate Fiber Filteration System MARIMO
32	株式会社堀場製作所	PM2.5　自動成分分析装置「PX-375」	Horiba, Ltd.	PM2.5 Automatic Particle & Element Analyzer
33	三浦工業株式会社	ボイラ設備の省エネルギー診断	Miura Co., Ltd.	Energy Saving Diagnosis for Boiler Facility
34	リマテックホールディングス株式会社	資源循環のトータルコーディネート	REMATEC Holdings Corporation	Total Coordination of Resources Recycling

Control 「WATER」 according to the purpose.
「WATER」 an important source of life

Asahi Chemical & Industrial Co., Ltd.

Features

◎ Design and construction of water treatment facilities
◎ Design and construction of waste water treatment facilities
◎ Proposition of water treatment to the water quality
◎ Attentive after-service, such as water quality analysis

Rapid Filter + Softener (River Water Treatment)

Wastewater treatment (High salt concentration
Wastewater treatment by the halophilic microorganisims

Overview (Technical principles, actions, etc.)

Water treatment
A combination of filtration equipment, Deferrization & Demananization, Ion exchange, RO equipment, Demineralizer, Activated carbon filter and we carry out the complete design and construction and user's request of treated water quality and raw water quality.

Wastewater treatment
We carry out the design and construction in order to check the water of out of the factory and effluent standard of the region.

Water treatment chemicals
We will advise to analyze water quality and after service as a supply chemicals much to the water quality.

Asahi Chemical & Industrial Co., Ltd.
I1-7-11, Haradanaka, Toyonaka, Osaka 561-0807, Japan

URL: http://asahi-c-i.co.jp/
E-mail info@asahi-c-i.co.jp
TEL: +81-6-6855-1051 FAX: +81-6-6855-1054

Team E-Kansai

Performance /specifications of technology / product

Chemicals for boiler water treatment
and Cooling/Hot water

Full Automatic Activated Carbon Filter +
Mix Bed Demineralizer

Usage examples / result

Vietnam	Facilities of Water treatment and Wastewater treatment . Chemicals for Boiler water & Cooling/Hot water
Thai Land	Facilities of Water treatment and Wastewater treatment . Chemicals for Boiler water & Cooling/Hot water
UAE	Seawater filtration treatment facility
Singapore	Water treatment facility and Demineralizer etc.
China	Water treatment facility and Demineralizer etc.
Taiwan, Korea	Water treatment facility
Indonesia	Water treatment facility
Philippines	Water treatment facility

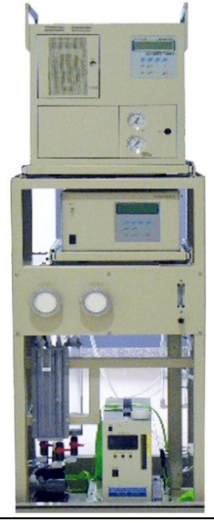
In addition our company has many deliveries to customers in a broad range of industries, including Japan..

ONLINE AUTOMATIC VOC ANALYZER EHF-770V

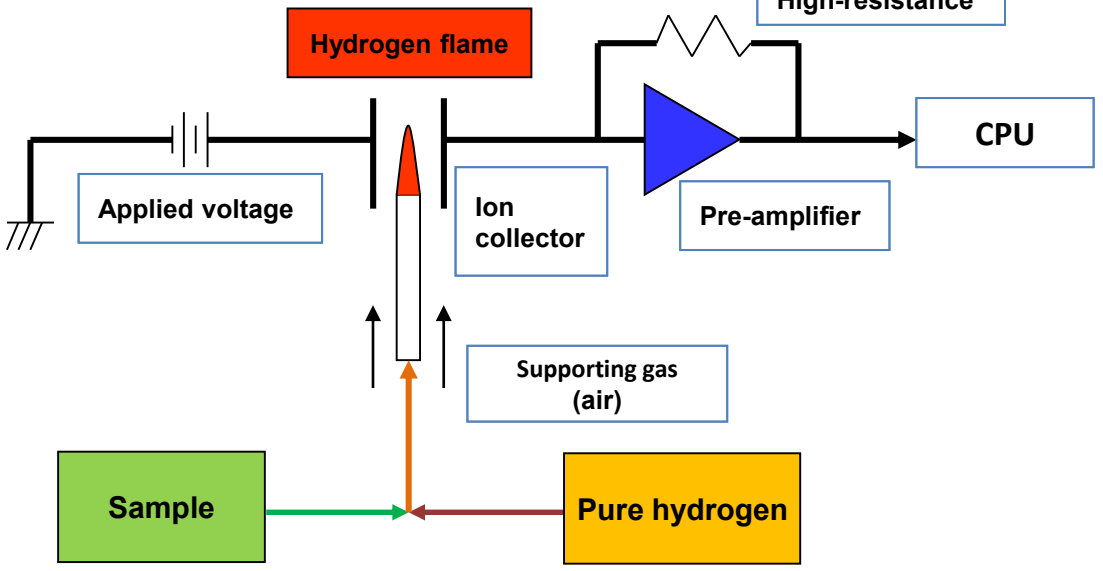
– ANATEC YANACO CORPORATION –

HOT-FID *enables long-term continuous monitoring !*

Analyzer



Indoor installation type



Feature

- Capable of stable measurement even when measure high concentration and/or high boiling point VOCs !
- No deterioration (corrosion) of the FID detector by the chlorine gas/hydrogen chloride gas !
- Wide ranges of measurement (from low to high concentration) is possible compared to the other VOC analyzers (NDIR, non-heated FID, PID) !

Overview

By utilizing proven YANACO **HOT-FID** technology (Heating all sample lines from sample inlet to detector outlet.), **EHF-770V** can measure VOC (Volatile Organic Compounds) exhausted into atmosphere accurately and comprehensively. So, this analyzer is suitable for long-term continuous monitoring under the self-imposed control of VOC gas.

As this analyzer can also reduce the influence of adsorption of high concentration and/or high boiling point hydrogen gas to the minimum by using HOT-FID technology, it is possible to measure VOC gas forming in the various production process accurately with high response.

ANATEC YANACO CORPORATION Overseas division

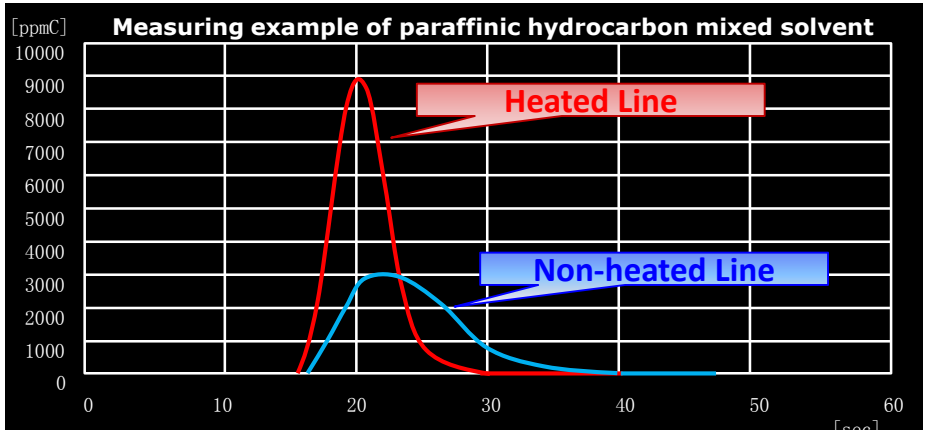
145 Hiratsuka-cho, Shimotoba, Fushimi-ku, Kyoto, 612-8387, Japan

URL;http://www.anatec.yanaco.co.jp/

E-mail y.maytsuii@yanaco.co.jp
Phone:+81-75 -611-1100 Fax:+81-75-611-1120

Team E-Kansai

Performance



Usage example

- Provide with the most suitable screening method for measuring work environment !
- For control of VOC collection apparatus !
- For prevention of gas explosion accident !
- For odor control !

Example of installation

Inside of the cubicle

Outdoor installation type

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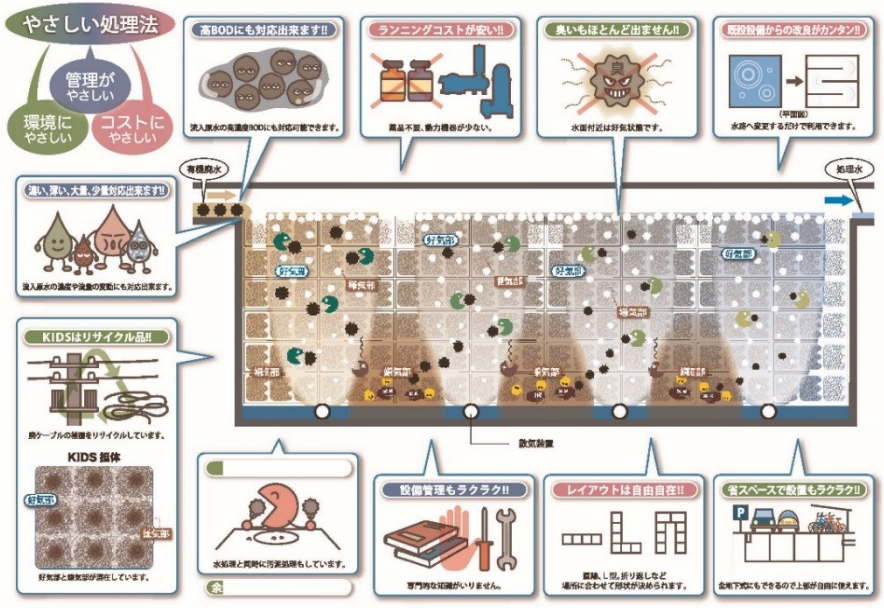
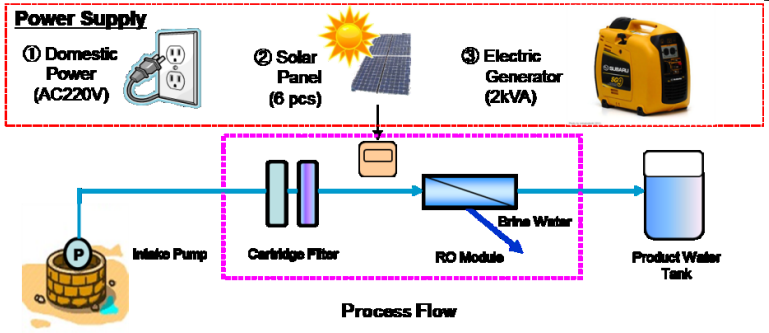
Wastewater Treatment「KIDS」 Water Treatment「RO」unit - OGISO KENTIKU Co.,Ltd -

KIDS-system



RO-unit



Features

KIDS : Management is simple, keep the environment, low-cost with in KIDS system

RO : Its optimized design makes it a compact and lightweight unit that can be easily dispatched to different locations where fresh water is needed.

Overview (Technical principles, actions, etc.)

We will give you the information about the water treatment.
Waste water treatment. (KIDS system)

Portable Water Treatment Unit
The design of RO unit. The design of PVRO unit.

OGISO KENTIKU Co., Ltd.
24-53 Nagase-cho Tajimi-city Gifu 507-0017, JAPAN

URL ; http://ogiso-ken.jp/

E-mail ogiso@mail.c-5.ne.jp
TEL: +81-572-22-8703 FAX: +81-572-22-8963

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Performance /specifications of technology / product

KIDS

1, Less sludge

High reductability of excess sludge : 1/8 compared with the ASP

2, Do not use chemical

Maintenance-free and without chemicals

3, recycled material

Environmental-friendly: Made of recycling plastic

RO

1,safe potable water production from well water

This unit can remove virus, bacteria, heavy metal, and organic substances by using RO technology

2. Simple & Quick Start-up & Operation

Onsite assembling is not required. The unit can commence operation shortly after setup.
Automated shutoff in case of clogging of cartridge filter and RO membrane.

3. Easy to carry

Light-weight body with casters make it possible to be relocated easily.

Usage examples / result

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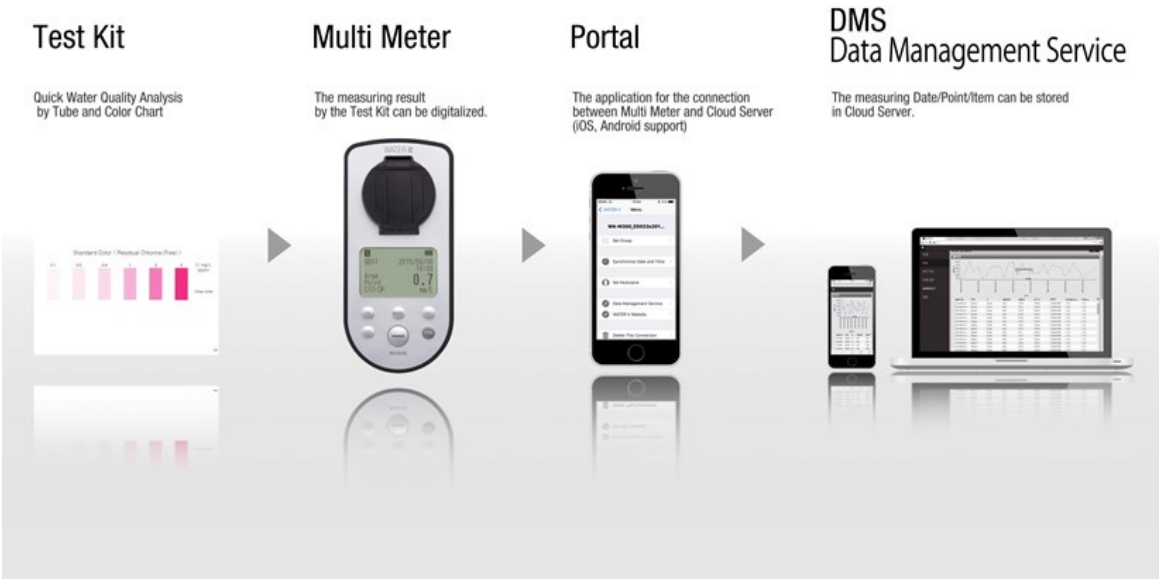
WATER it

OPTEX CO., LTD.

This is the best solution of Quick Water Quality Measurement on site!



Feature

Quick measurement of water quality on site become available.
Anyone can check the water quality by simple processes.
Using OPTEX DMS (Data Management Service), the measurement results can be checked on website.

Overview

"WATER it" can measure 30 items of water quality by each chemical. Depending on the measuring water color density by the chemical reaction, Water quality can be checked by Color Chart or Multi Meter. Using the APP for smart phone, the measurement results can be transmitted to the cloud server.

OPTEX CO., LTD. NSS Division
5-8-12 Ogoto Otsu Shiga 520-0101 Japan

URL; http://www.optex.co.jp/env/eng/

E-mail env@optex.co.jp
TEL:+81-77-579-8680 FAX:+81-77-579-8199

Team E-Kansai

Items which can be measured by WATER it

COD
Phosphate
Phosphate-Phosphorous
Ammonium
Ammonium-Nitrogen
Nitrate
Nitrate-Nitrogen
Nitrite
Nitrite-Nitrogen
Residual Chlorine
Total Hardness

Nickel (DPM)
Copper
Chromium (Hexavalent)
Total Chromium
Free Cyanide
Arsenic
Metals (Cu, Zn, Mn, Ni, Cd)
Zinc
Magnesium
Iron
Manganese

pH
Phenol
Formaldehyde
Sulfide (Hydrogen Sulfide)
Calcium
Chloride
Fluoride (Free)

Applications

Supply water management

Wastewater check

Boiler feed water check

Well water check

Agricultural management

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Electrodynamic Dust Emission Monitoring System -KANSAI Automation Co., Ltd.-

Detect the dust concentration with no influence by buildup on the probe

VIEW370

Leak Alert65-02

Features

- Not influenced by buildup or contamination on the probe
- Probes with TEFLON coating, special air purging and heatsink (max. 800℃) are available.
- Maximum 16 pcs sensor can be connected to just one controller (VIEW370PLUS)

Overview (principle, operation, etc.)

【Measuring principles】
Measures the charge transfer between the probe and particles inside the duct and provides the current output proportional to the emission. Though the probe is inserted into the duct, it detects the dust concentration with Non-contact technology. Very unique and only product in Japan.

KANSAI Automation Co., Ltd.
Overseas Sales Department
2-14, Togano-cho, Kita-ku, Osaka 530-0056, JAPAN

URL: http://www.kansai-automation.co.jp/eng/
E-mail trade@kansai-automation.co.jp
TEL: +81-6-6312-2071 FAX: +81-6-6314-0848

Team E-Kansai

Performance /specifications of technology / product

【Controller】

Application	Specification
Power Source	90VAC～260VAC 1A(50/60Hz)
Output	DC4～20mA(isolated, max. 500Ω)
Resolution	<0.01mg
Self-diagnosis	COMM, Probe, ZERO, SPAN
Memory capacity	Short period 7days @1min. Pluse 2hours @1sec. Alarm 500 pcs
Temperature	-10℃～+55℃

【Sensor】

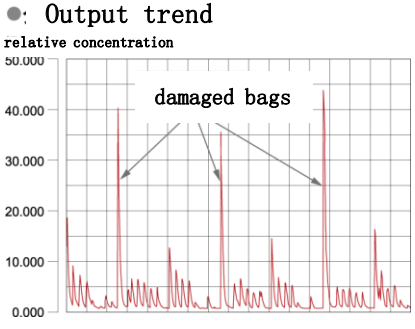
Application	Specification
Temperature	Ambient −25℃～+55℃ Inside the duct −25℃～+250℃(Standard) −25℃～+400℃(Middle High) −25℃～+800℃(High)
Probe Length	Maximum.1500mm (Over 1500mm can be consulted)
Probe Material	316SS/TEFLON (Option:Teflon coating)
Connection	Screw ＞R1・1/2 (Flange connection can be available)

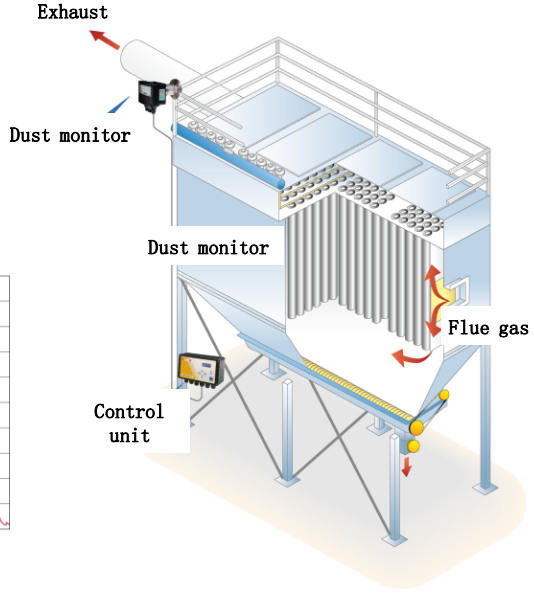
Usage examples / result

【Application of bag filter】
As to commonly-used bag filter, the dust concentration rises at the moment of bag cleaning.
If something is wrong with it, the dust concentration rises sharply like a pulse
.
Installing dust monitoring system after the bag filter and monitoring the dust concentration will ;

Predict initial failure
With checking the sharp pulses of the emission, you can avoid the bag broken in advance, replacing the suspicious ones during the maintenance period.

Reduce running cost
Like as the trend in right picture indicates, you can specify a damaged filter bag and replace just the damaged one to reduce the cost.





Team E-Kansai

Integrated Environmental Solutions

General Incorporated Foundation
EMATEC

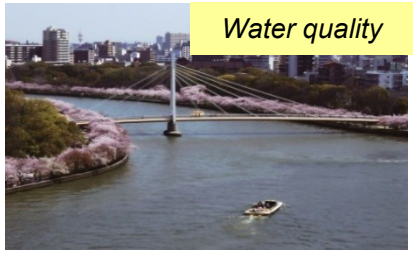
Environmental research (measurement and analysis), inspection and evaluation, environmental monitoring, assessment, consulting, and support to the grant business, etc.

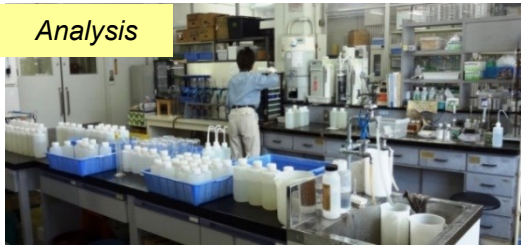
Features

EMATEC

- Environmental Management & Technology Center (a.k.a.:EMATEC) was established in 1972 as a comprehensive institute for environment technology by Japanese Ministry of Economy-Trade and Industry,Osaka Prefecture Government,Osaka City Government ,Kansai Economic Federation and Osaka Chamber of Commerce.
- We provide consulting in the overall technology and experience gained over a period of 43 years .

Research / Measurement / Analysis





Overview

- EMATEC performs appropriate precision management and performs the next business.

◆Environmental research,the measurement, analysis and inspection, evaluation of facilities
◆Environmental Impact Assessment **&**Environmental monitoring
◆Plan drafting of the local green plan
◆Joint suggestion, support of the JCM business

- As public utilities, EMATEC perform the holding of various seminars, the publication of the environmental information magazine, the lecture to a trainee and training, lecturer dispatch.

General Incorporated Foundation Environmental Management &Technology Center
Planning & Administration Department Research & Planning Division
9-10, Kawaguchi 2-chome, Nishi-ku, Osaka 550-0021, JAPAN

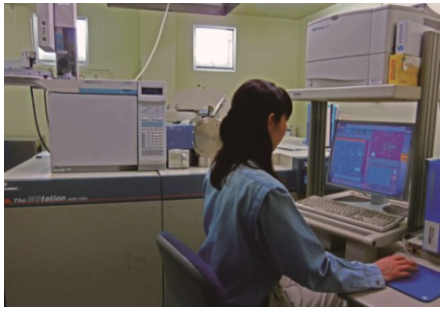
URL: http://www.ematec.or.jp
E-mail kansai_ksuishin@ematec.or.jp
TEL: +81-6-583-3262 FAX: +81-6-583-3274

Team E-Kansai

Performance /specifications of technology / product

Owned Equipment

- ◆Gas chromatography-mass spectrometer
- ◆Liquid chromatograph mass spectrometer
- ◆Ion chromatograph, etc.



Usage examples / result

Domestic Record

- ◆Soil pollution investigation (we are designated research institutes based on the law of Japan) we investigate soil pollution as a designated research institute
- ◆Environmental monitoring associated with development business and the construction
- ◆Suggestion of the river construction technique to reduce environmental influence
- ◆Environmental Impact Assessment such as an industrial area, a large-scale retail store, the waste disposal and treatment facility
- ◆Investigation into water environment (river, groundwater, sea area) and atmosphere environment, the measurement, analysis
- ◆Factory effluent, investigation about the road effluent gas, the measurement, analysis
- ◆Work environmental measurement , Examination for drinking water etc.

Overseas Record

- ◆Lecture to a member of JICA foreigner training
  7 countries 22 people in 2014、 1 countries 9 people in 2011、 7 countries 8 people in 2010
- ◆We dispatched the staff for the “technology and operations management” instruction of the water infrastructure (Indonesia 2012, Vietnam 2013)
- ◆ “The Joint Crediting Mechanism Project” Planning Study [JCM-PS] (Indonesia 2015)

Assumed Case

- ◆Consulting for environmental management of industrial park
  (Air quality, Water quality, Noise, Vibration, Bad smell, Harmful chemical substance etc.)
- ◆Consulting for waste water treatment technology
- ◆Consulting for soil contamination and groundwater pollution
- ◆Joint project with the overseas local university, research institute
- ◆Consulting about the JCM project

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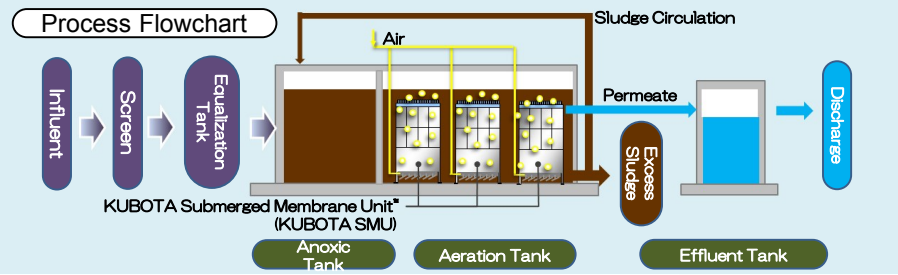
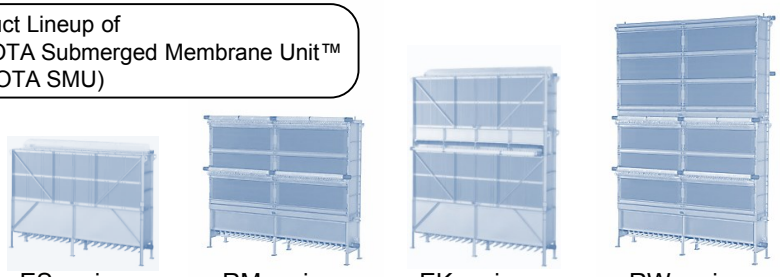
Water and Environment related products of KUBOTA

KUBOTA Corporation

KUBOTA Membrane Bioreactor（MBR） Process

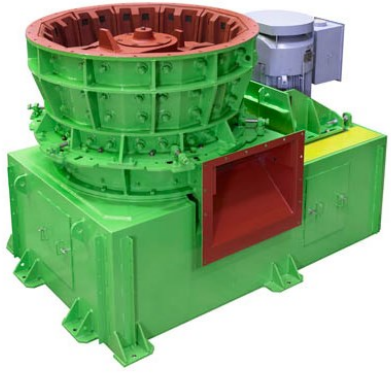


Product Lineup of
KUBOTA Submerged Membrane Unit™
(KUBOTA SMU)



ES series　RM series　EK series　RW series

Metal Scrap/Solid Waste Reduction and Recycling Equipment



Vertical Shredder: KE series

Single-shaft Shredder: NKR series

Features

- ✓ **Remarkably Small Footprint: The KUBOTA MBR process requires less aeration tank volume than a CAS process, and does not require any final clarifier.**
- ✓ **Excellent Permeate Quality: Permeated water from the KUBOTA SMU is highly treated. You can reuse the treated water for irrigation, toilet flushing etc..**

- ✓ **We offer best shredder solutions that realize simple and low-cost separation to promote efficient recycling.**
- ✓ **Our shredders process scrap metals and solid wastes, such as waste home electric appliances, PCBs, turnings, bulky waste, and combustible/incombustible wastes.**

Overview (Technical principles, actions, etc.)

The KUBOTA Membrane Bioreactor (MBR) process is a proven wastewater treatment method which combines a biological treatment process and a membrane filtration process for final solid-liquid separation with KUBOTA SMU. This is applied to municipal and industrial wastewater treatment.

Vertical Shredder: features compound shredding with special hammers and reduces waste materials into small, uniform particle sizes. Its vertical structure allows for highly efficient reduction of bulky waste.
Single-shaft Shredder: features shear-shredding with rotating and fixed cutters and employs the shredder-specific special torque limiter to ensure safe and stable operation.

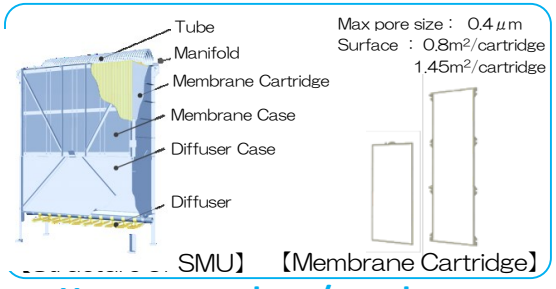
KUBOTA Corporation
Water & Environment Planning and Control Dept.
1-3, Kyobashi 2-chome, Chuo-ku Tokyo 104-8307, Japan

URL: http://www.kubota.co.jp
E-mail kbt_g.mizusoukatsu@kubota.com
TEL: +81-3-3245-3933　FAX: +81-3-3245-3885

Team E-Kansai

Performance /specifications of technology / product

KUBOTA Submerged Membrane Unit™ (KUBOTA SMU) has “Flat Plate” type membrane. The membrane sheet is made of chlorinated polyethylene with maximum (nominal) pore size of 0.4 μm (average: 0.2 μm) which blocks most microorganisms in the activated sludge.



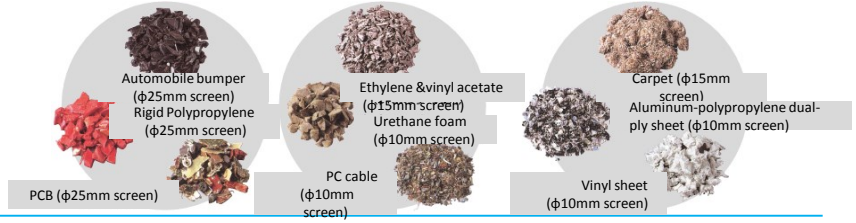
SMU】 【Membrane Cartridge】

【Data in a sewage plant】
(Annual Average in F STP)

Item	Influent	Effluent
BOD_5	99	1.0
SS	120	N.D.
T-N	36	5.8
Coli-form	—	N.D.

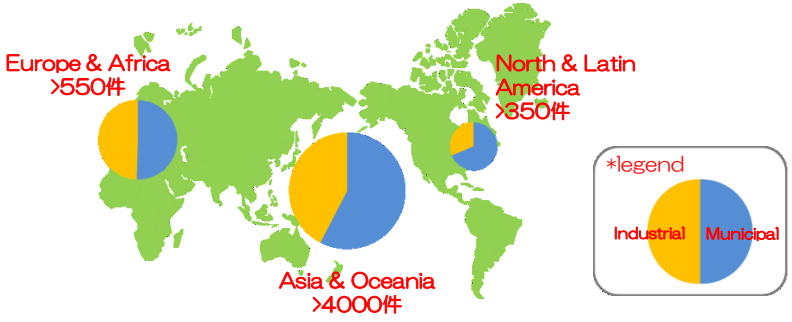
Vertical Shredder KE series: Output particles(example) after shredding/separation

Single-shaft Shredder NKR series: Output particles(example) after shredding/separation

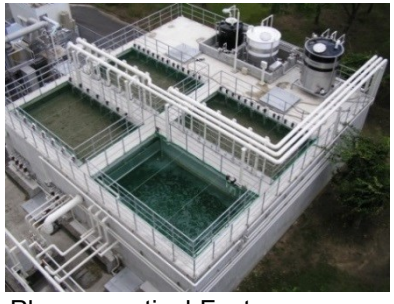


Usage examples / result

Greater than 5,000 Installations all over the world, including various types of industrial wastewater.
(Food, Beverage, Pharmaceutical, Dyeing, Livestock , Laundry, etc.)



Industrial Park



Pharmaceutical Factory

Our machines have been installed by global customers for efficient waste recycling.

[**Vertical Shredder KE series**: track record]

	End User	Product	Application
South Korea	Metal scrap processor/recycler	KE-600, etc: 8 units	Aluminum scrap
China	Metal scrap processor/recycler	KE-400S, etc: 5 units	Home appliances
Europe	Metal scrap processor/recycler	KE-600, etc: 4 units	Home appliances
U.S.A.	Metal scrap processor/recycler	KE-400: 1 unit	Automobile scrap

[**Single-shaft Shredder NKR series**: track record]

	End User	Product	Application
South Korea	Cement manufacturer	KR-200, etc: 4 units	Blowing in kiln
	Waste plastic processor/recycler	KR-200, etc: 4 units	RPF pretreatment
Europe	Waste plastic processor/recycler	KR-150: 1 unit	Waste plastics
SE Asia	Paper manufacturer	NKR-200, etc: 3 units	Alternative boiler fuel

Team E-Kansai

High Performance Activated Carbons

KURARAY CHEMICAL CO.,

Proposal of global network and solutions
New carbon technology for customer satisfaction
Activated carbon experts answer you.

Features

- Contribute to clean Water; By providing various types of activated carbon to meet the market needs, we assure clean & safe water supply.
- Contribute to clean Air; i,.e. Kuraray Chemical's activated carbon technology is contributing solvent recovery in the factory setting.
- Contribute to green Energy; Our advanced carbon pore control technology is contributing to superior supercapacitors in the field of energy regeneration & storage.

Overview

Activated carbon is as interesting material, which has very small molecular size pores. While widely used in air and water purification, activated carbon nowadays contributes energy storage field with its high adsorption characteristics.
Our expertise in R&D, procurement, production engineering, QC, and sales & marketing makes it possible to provide the optimized solution in the various fields from environmental purification to energy storage.

KURARAY CHEMICAL CO., LTD. Overseas Relations Department
URL; http://www.kuraray-c.co.jp/
Umeda Hankyu Building Office Tower 8-1, Kakudacho
Kita-ku, Osaka 530-8611, Japan
E-mail Please contact us through website
TEL:+816-7635-19100 FAX:+816-7635-1901

Team E-Kansai

Performance /specifications of technology / product

Activated carbon business		
KURARAY COAL™	Liquid phase	GW, GW-H, GLC, KW, SW, others
	Gas phase	GG, SG, GS, GC, GA, SA, GK, others
	Powder activated carbon	PW, PK, PDX, others
	Special activated carbon	G-H, T-B, T-C, T-S, others

Functional activated carbon business
Fine activated carbon (KURARAY COAL™)
Wet molding carbon filter
Activated carbon fiber
Activated carbon sheet
Impregnated activated carbon
Dry molding carbon filter

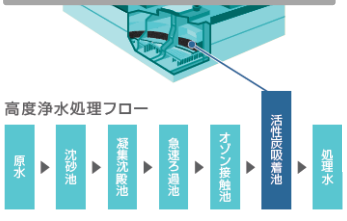
Equipment manufacturing business
Nitrogen gas generator (KURASAP™)
Carbon Molecular Sieve (CMS)

＊Please contact us for detail performances and specifications.

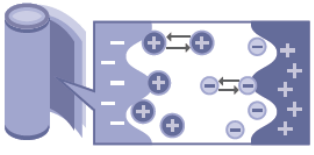
Usage examples / result

Our unique technology adjust the diameter and volume of pores on the surface of activated carbon

Water purification:
Water treatment in water works, Industrial and household waste water, purification of drinking water, Ultra-pure water equipment



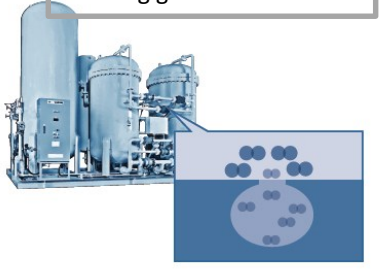
Energy storage:
Electrode material, Methane storage



Air purification:
Removal of automobile pollutants, Trapping plant generated exhaust gases, Removal of general toxic gases, Recovery of solvents, Removal of dioxin

Household products:
Cigarette filters, Household water purifiers, Air cleaners, Refrigerator deodorizers, Medical nursing supplies

Industrial use:
Catalyst carriers, Gas mask, Decolorization of industrial chemicals, Recovering gold, Capacitors, Separating and refining gases



ISO 9001 ISO 14001

JWWA

薬F-4
水道用粉末活性炭
初回登録 2002年12月
鶴海工場

Kuraray Chemical's PGW/PGWH Carbon is certified by the Water Quality Association to S-802 for sustainability.

NSF

Kuraray Chemical's GW/GW-H/PGW/PGWH/T-SCOB/APG/PMC grades are Tested and Certified by NSF International against NSF/ANSI Standard 42 for material requirements only.

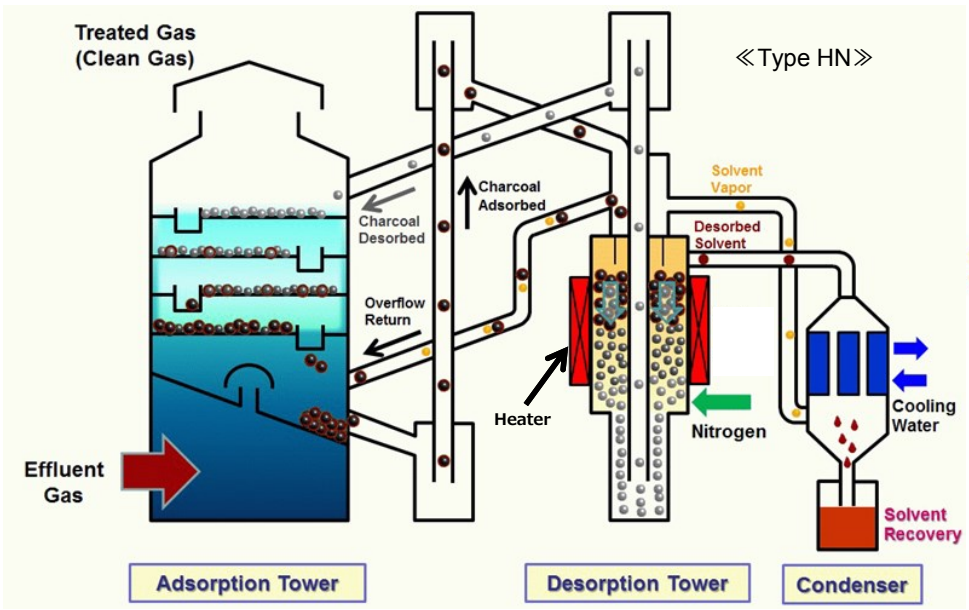
COMPONENT

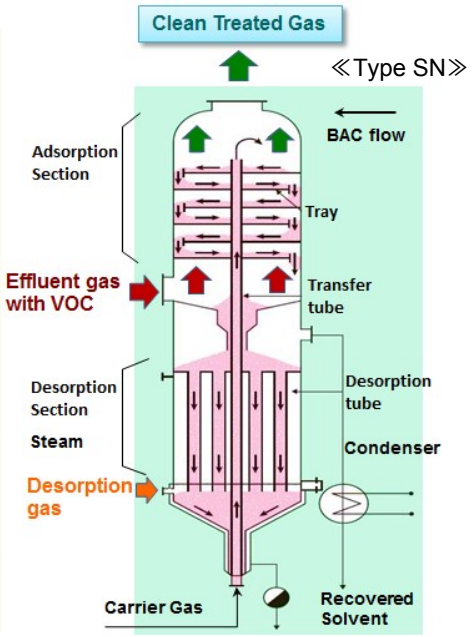
Team E-Kansai

For the future of people and nature

VOC Treatment GASTAK® KUREHA ECOLOGY MANAGEMENT CO., LTD.

For **VOC (Volatile Gas Compounds)** exhaust gas treatment and recovery



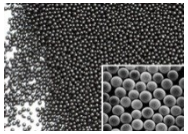


Features

① Using Kureha's spherical activated carbon called" BAC"

Bead Activated Carbon

- High resistance against attrition, less dust generation
- Small spherical grains which enable high speed adsorption
- Excellent flowability with Low ash content
- Almost no deterioration over repeated reactivations



② Advantages of Fluidized Bed System

- Stable and uniform operation by continuous adsorption and desorption
- Safe operation even for flammable solvents because of no heat accumulation
- Almost no waste water generation by using N2 or air for desorption gas
- System footprint can be minimized and no special knowledge or technique are required for operation.

Overview (Technical principles, actions, etc.)

Adsorption section — **Clean effluent gas by absorbing VOC ingredients with 15~20mm thickness fluidized bed of BAC.**

Transfer section — **Returning desorbed BAC to the adsorption section to repeat the adsorption and desorption.**

Desorption section — **Desorb VOC ingredients from BAC and transfer them into Condenser to recover them as VOC solvent.**

Environment Sales Division Kureha Ecology Management Co., Ltd. URL:http://www.kurekan.co.jp/

Address: 30 Shitanda, Nishiki-machi, Iwaki City, Fukushima 974-8232 ,Japan TEL: +81-246-63-1358 FAX: +81-246-63-1359

Team E-Kansai

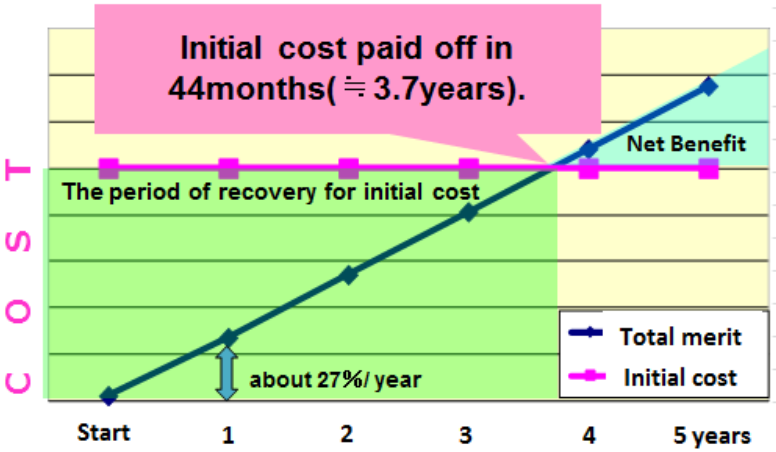
Cost merit ～Case study in Japan～

① Case Study condition

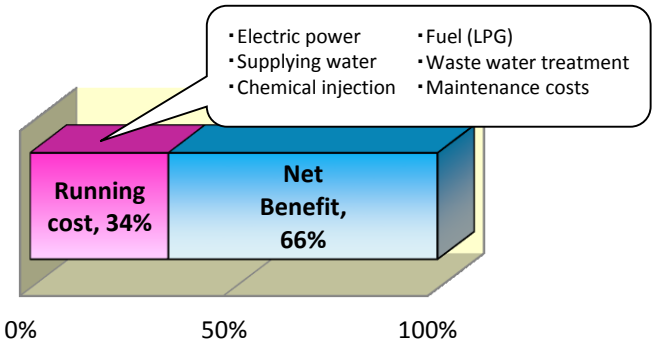
Exhaust gas treatment of Dry laminator

Gas volume	850㎥／min at58℃
Target compornent	Ethyl acetate 860ppm
Treatment Capacity	Outlet concentration Less than 70ppm
Amount of solvent recovery	130kg／h

② Case study of Cost merit by Solvent recovery

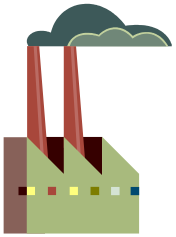


③ breakdown of total benefit by solvent recovery



Initial cost can be paid off by ~ 2.3% per month. (27% per year)

Contribution for CO_2 reduction



《Exhaust gas conditions》
Air flow：650N㎥/min
Concentration：
★1MEK 1,580ppm
★2MCS 470ppm

Example of operating time =8,000h / year

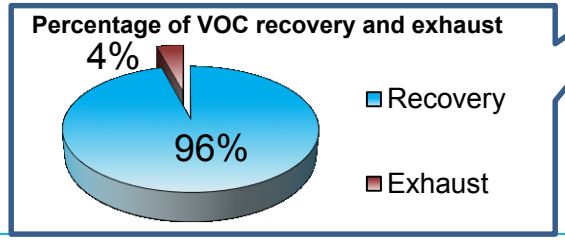
Amount of discharging solvent ≒ 2,082 t / year

★1 MEK：methyl ethyl ketone
★2 MCS：2-Methoxyethanol

In the case of Oxidation & Decomposition (Incineration disposal)

= **4,732 t-CO_2/y**

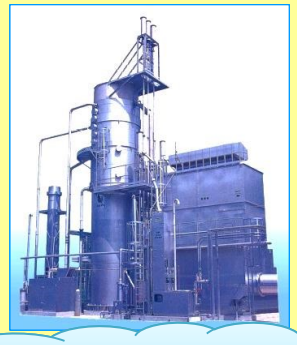
Emission !



In the case of GASTAK®

Solvent Recovered 96%
(≒ 1,995 t/y)

4,534 t-CO_2/y



Reduction!

Sales Performance

- **Market Industries and Sales Volume:** Equipment cleaning, semiconductor, printing, and ink factory ,etc. about 490 units.
- **Countries Delivered:** Japan, China, Taiwan, the United States, Canada, New Zealand, Singapore and Brazil.

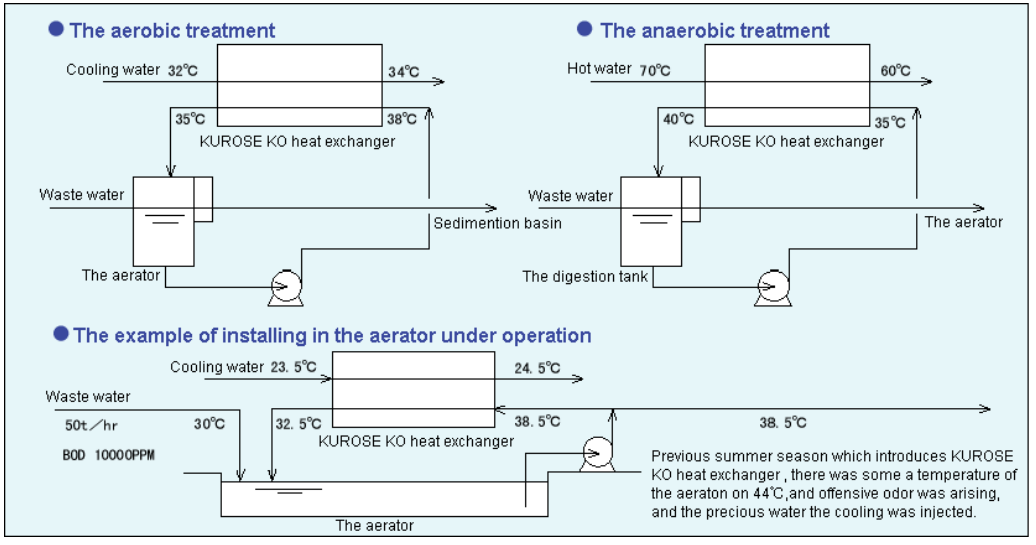
ISSUE 2015.Sep

Team E-Kansai

Spiral heat exchanger for waste water

KUROSE CHEMICAL EQUIPMENT CO.,LTD.

Good for waste water that contains a lot of contaminants, such as fiber.



Features

- Single channel geometry reduce the fouling, and it called ″self-cleaning″.
- Customized solution to meet the all process with high heat transfer rate.
- Easy access is good for cleaning and inspection.

Overview (Technical principles, actions, etc.)

Spiral has two concentric spiral channels, one for each fluid. Single channel geometry reduce the fouling, and it called ″self-cleaning″. Therefore, fluid with solid go through the spiral channels very smoothly. Especially, this model strong for fluid with fiber.

KUROSE CHEMICAL EQUIPMENT CO.,LTD. Osaka Branch

Ozawa Bldg. 19-12, 1-chome, Edobori, Nishi-ku, Osaka 550-0002
JAPAN

URL http://www.kurose.co.jp/index_e.htm

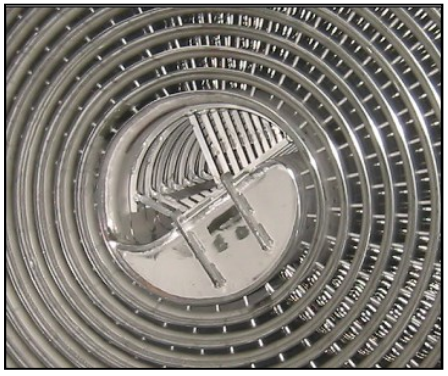
E-mail hatono@kurose.co.jp

TEL:+81-6-6444-0881 FAX:+81-6-6444-0885

Team E-Kansai

Performance /specifications of technology / product

As the left side photo, spiral has the clearance piece which is called " distance piece". When it comes to fluid including the fiber, to be blocked. Because of " distance piece".
So we(KUROSE) developed solution. As the right side photo, That model have no "distance piece". Therefore, fluid with fiber go through the spiral channels very smoothly. Also for cleaning and inspection, this model is better than previous one.



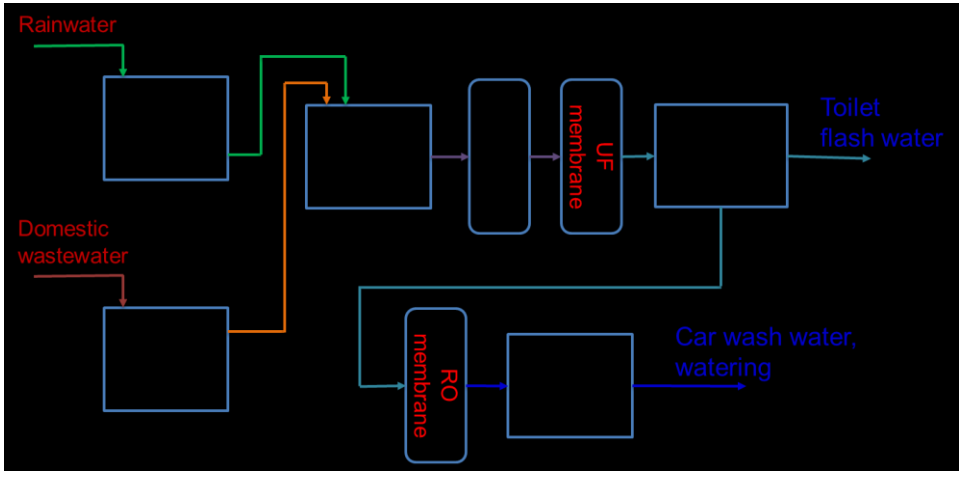
Usage examples / result

- Have a 80 percent share for a sewage treatment plant in Japan.
- Apply for the food and fiber industry's waste water plant.

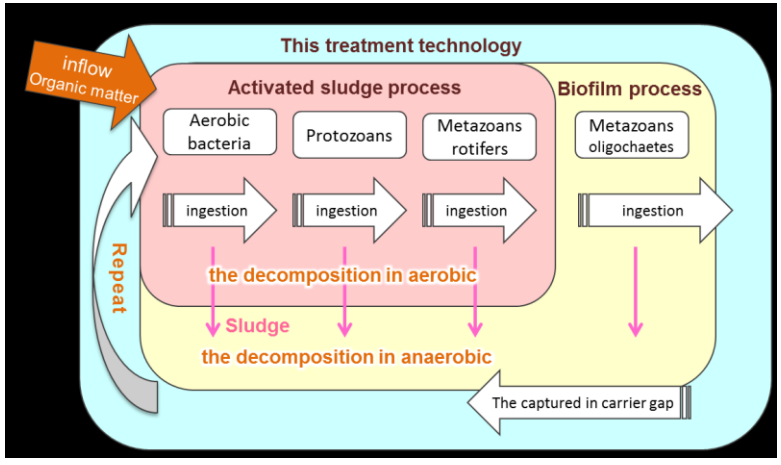
Team E-Kansai

Water purification, Wastewater treatment Technology - SANICON CO.LTD -

Engineering company that specialized water and environment
The total support about life and industrial in the core of water treatment technology
Planning, design, construction, maintenance, repair, We will provide a consistent service !!



Water purification system case by the membrane technology



Wastewater treatment, the principle of technology

Features

Water purification: We will select the membrane in according to the raw water and treated water applications.
Reuse of rainwater and wastewater, Reduce electricity consumption of the air conditioner by membrane technology.
Wastewater treatment: Sludge incidence is low, Free layout, Easy improvement to existing system, Easy system maintenance.

Overview (Technical principles, actions, etc.)

Water purification: Purification of the well water, Reuse of the rainwater and wastewater, Effective use of the limited water resources !!
Reduce electricity consumption of the air-conditioner by the application of water purification technology.
Wastewater treatment: Generating amount of Excess sludge compared to the active sludge process, This system is less than 50％.
Reduce cost for sludge disposal , it can cut the maintenance cost !!

SANICON CO.,LTD.

3-345, Mozuryonan-cho, Kita-ku, Sakai-shi, Osaka 591-8034, JAPAN

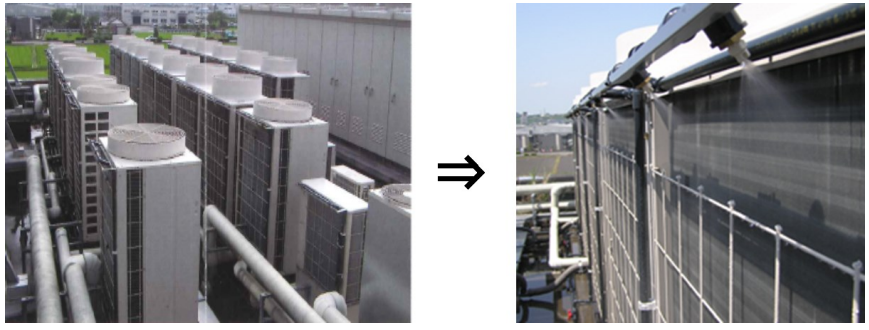
URL: http://www.sanicon.co.jp

E-mail soumu@sanicon.jp
TEL: +81-72-277-3255 FAX: +81-72-277-0200

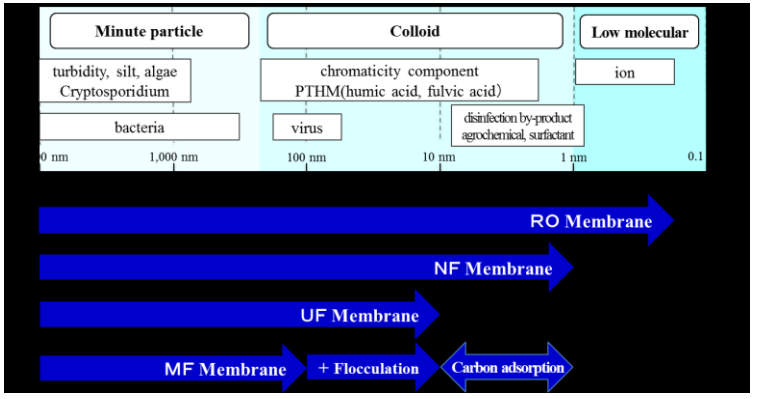
Team E-Kansai

Performance /specifications of technology / product

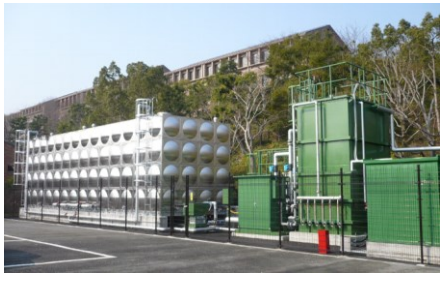
Reduce electricity consumption by spraying water to outdoor unit



The comparing size of membrane pore with the processing material



Usage examples / result



Well water purification system (University)

Wastewater treatment system (Industry)

Saving-Energy, Spraying water system (Hotel)

Well water purification system (Shrine)

Well water purification system (Hospital)

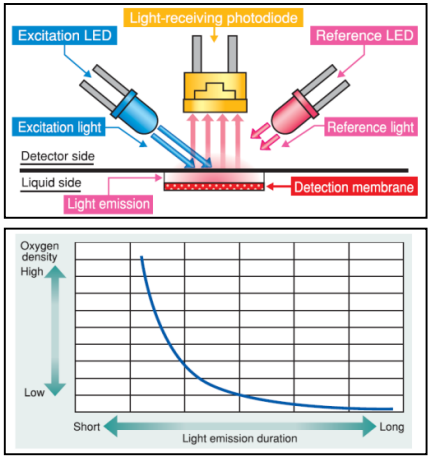
Reuse water treatment system (Building)

Team E-Kansai

Instrumentations in water and sewerage facilities

JFE Advantech Co.,Ltd.

- **Reliability and extensive experience in water and sewerage facilities**



Features

・Submerged level detectors
- —Robust structure. The robust structure offers high shock resistance.
- —Excellent lightning and noise protection
  Built-in lightning arresters. These features provide enhanced protection against lightning-induced voltage and noise.
- —Superior resistance to sludge and floating objects
  Since the detector is installed underwater, it is not affected by surface water conditions

・Optical DO meters
- —Our optical DO meters is used for measurements of the dissolved oxygen in the aeration tank such as sewage treatment plants .
- —Optical sensor is used, so it is excellent in stability and the response.

Overview (Technical principles, actions, etc.)

・Submerged level detectors
- — Our submerged level detectors measure water depth by detecting water pressure.
- —These detectors can serve for monitoring water levels, and automatic control of pumps and gates.

・Optical DO meters
- —The detection membrane is emit fluorescence by the excitation light. Fluorescence state is depending on concentration of oxygen around the sensing membrane.
- —The lower the oxygen concentration, the longer the fluorescence time. In a contrasting situation fluorescence time is shorter. Thus the fluorescence time correlate to the oxygen concentration.

JFE Advantech Co.,Ltd.
Water Environment Division
3-48,Takahata-cho,Nishinomiya,Hyogo,663-8202, Japan

http://www.jfe-advantech.co.jp/eng/
E-mail teramae@jfe-advantech.co.jp
TEL +81-798-66-1502 FAX +81-798-65-7025

Team E-Kansai

Performance /specifications of technology / product

・Submerged Level Detectors
Sensor employs a differential transformer
High precision, Long-term stable

Measuring Range	0～0.8m to 0～40m
Accuracy	±0.2% of span
Operating temperature range	±0.015%/℃ of span
Output signal	DC4～20mA

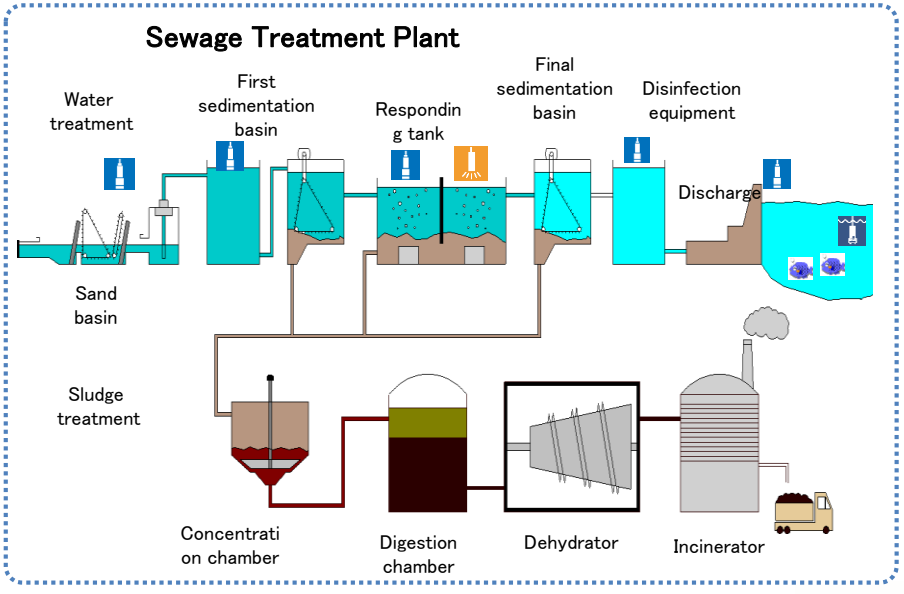
・Optical DO meters

Measuring range
Dissolved oxygen concentration : 0.00～20.00mg/l
O_2 Saturation : 0.0～200.0%
Water temperature : 0.0～50.0℃

Accuracy	±2%F.S.
Repeatability	±0.5%F.S.
90% response time at 25℃	<30sec
Output signal	DC4～20mA

Usage examples / result

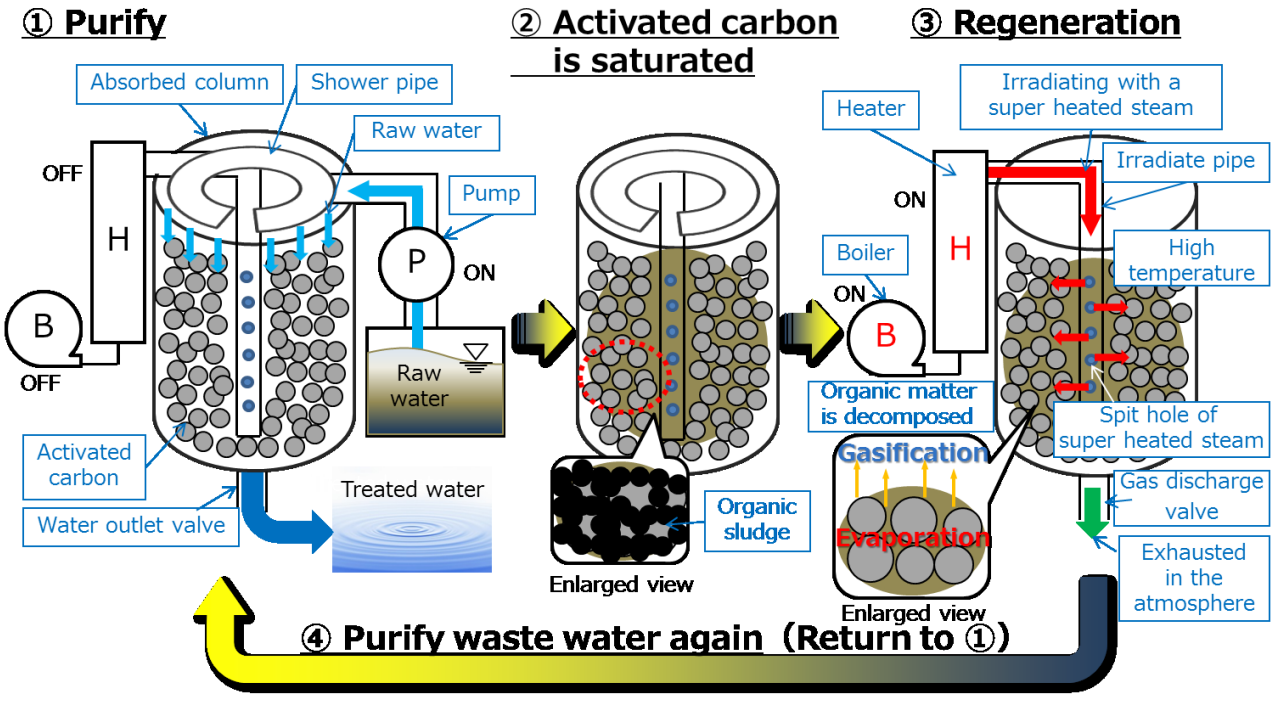
– In water and sewerage facilities in Japan, and has been introduced about 50,000 more units.



Team E-Kansai

Regenerating Activated Carbon Wastewater Purification System - JTOP Co., Ltd. -

Change wastewater to usable water



Features

- Activated carbon in the adsorption column is regenerated automatically, so takeout and exchange work is unnecessary.
- The running cost can significantly reduce because the activated carbon can be used repeatedly.
- This system can purify to the level that wastewater can be reused because it is advanced treatment.

Overview (Technical principles, actions, etc.)

J top technology is a breakthrough "activated carbon recycling technology". The pollutants in wastewater are adsorbed on activated carbon, and wastewater is purified. The contaminants that are adsorbed are vaporized and desorption by the superheated steam and regenerated on-site without removing the activated carbon from the device. This system makes it possible for the following. “Cost advantage” “Space saving” “Easy to install” “Almost no sludge” “Advanced treatment” “Produce recycling water” “Removal of persistent substances” “Eliminate odor”

JTOP Co., Ltd.

4-5-44, Migata-cho, Izumi-city, Osaka 594-0042, JAPAN

URL: http://www.jtops.com

E-mail info@jtops.com

TEL: +81-725-51-3830 FAX: +81-725-51-3861

Team E-Kansai

Performance /specifications of technology / product

- In addition to basic sizes, we prepare the size according to the needs of you.
- The design treatment amount depends on characteristic of wastewater. Please do not hesitate to contact us, if you require any further information.

Model	Column size	Quantity of Activated carbon	Heater	Equivalent evaporation of boiler
Small	Φ300mm × 1,600mm	110L	6kW	30kg/h
Middle	Φ600mm × 1,700mm	330L	25kW	100kg/h
Large	Φ900mm × 1,700mm	1,000L	25kW × 2	200kg/h

Usage examples / result

- Our system was installed in many factory (rubber, medicine manufacturing, semiconductor and print, etc.), warm bath facilities and the flush toilet on top of mountain in Japan.
- Our technology has begun to be spread in Indonesia at the project of JICA (the Japan International Cooperation Agency). In 2015 our device will be sold in Hong Kong.

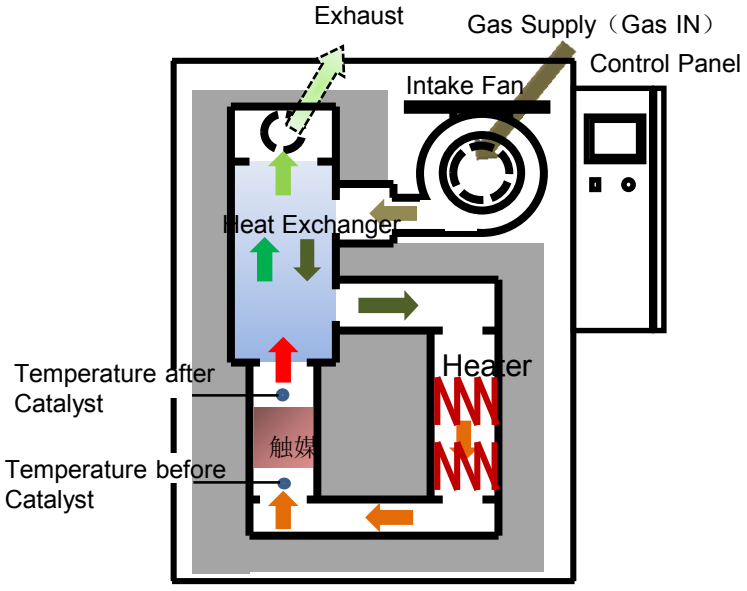
Toilet on top of Mt. Oyama.

Team E-Kansai

Packaged VOC Catalytic Combustion Machine　SHIMAKAWA SEISAKUSYO Co., Ltd. -

The best VOC treatment equipment for laboratory or factory

Packaged VOC Catalytic Combustion Machine



Process Flow

Features

(1) Space-saving design: only need size of W1350×D650×H1550 for the air flow of 3m3/min
(2) Energy-saving design with plate type heat exchanger only need electricity for power
(3) Supply gas by pushing and the flow rate can be kept stable

Overview

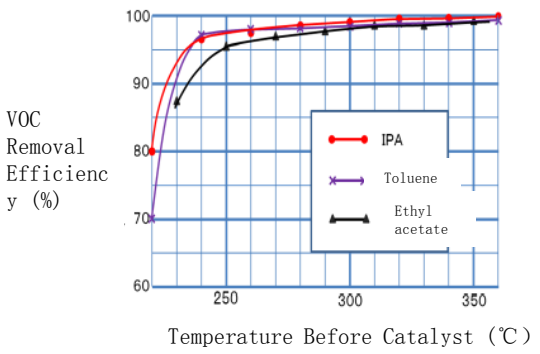
Developed from the popular packaged VOC treatment equipment 'MD series' and it is more compact, more high-performance and easier to operate. VOC can be combusted under low temperature by minor metal catalyst with high efficiency.

SHIMAKAWA SEISAKUSYO CO., LTD..
Tsuda Science Hills, 2-9-3, Tsudayamate, Hirakata, Osaka, 573-0128
URL: http://www.shimakawa.co.jp
E-mail
TEL: +81-072-808-3055　FAX: +81-072-808-3057

Performance /specifications of product

Model		NMD-3	NMD-6	NMD-12	NMD-20
Flow Rate (Nm3/min)		1.5~3	3~6	6~12	12~20
Size (mm)	W	1500	1650	1700	3250
	D	890	1050	1350	1380
	H	1770	1850	1870	2230
Heater Capacity (kW)		10	20	40	66
Fan Power (kW)		0.4	0.75	1.5	3.7
Heating Time 20→300℃		Less than 60 min			
Power Supply (A) (380V 3ϕ 50Hz)		25	40	75	125
Weight (kg)		400	600	900	2000

Efficiency of VOC Removal
(Measured by Total hydrocarbon analyzer)



Usage examples

- For the treatment of exhaust from heat treatment instrument in chemical factory

  VOC like toluene and xylene can be removed by efficiency of 95% with flow rate of 6 m^3/min!

- For the treatment of exhaust from instrument for film manufacturing

  VOC like ethanol can be removed by efficiency of 95% with flow rate of 20 m^3/min!

- More than 200 of this product have already been in use mainly in chemical factories and laboratories, and so on!

SHIMAKAWA

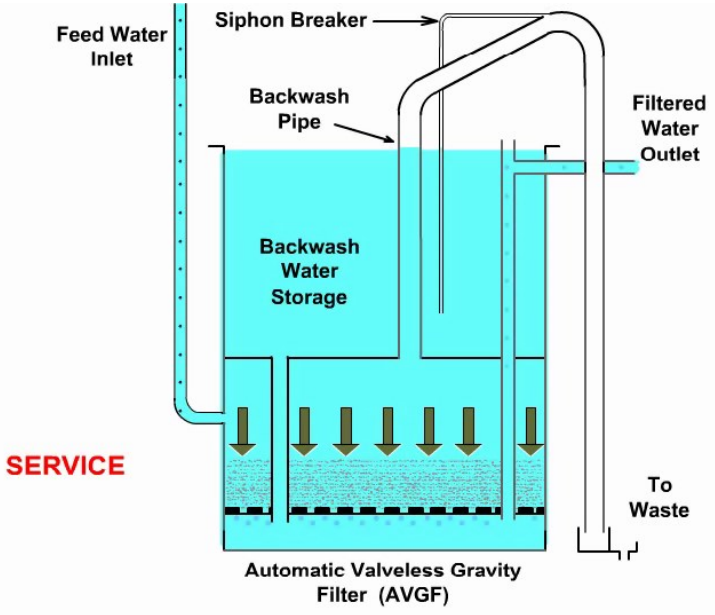
ASF(AUTO SIPHON FILTER)

KOBELCO ECO-SOLUTIONS CO.,LTD.

ASF to enable supply of clean drinking water at low operating cost in rural area.

Combination of PreTreatment (left side) and ASF (right side) System

Water Volume: 1,375m3/day



Features

- This technology is suitable to provide clean water in less populated area like villages.
- Compared with the other filters, the operation and maintenance cost is drastically lower because of no operators, washing pumps, electricity.
- We have provided more than 2,000 units to rural areas in Japan giving many people the access to clean potable water.

Overview (Technical principles, actions, etc.)

- This is a full-automated gravity filter that doesn't need automatic valves, flow control valves and backwash pumps and any equipment.
- As filtration continues, turbidity components on the filter layer increase, and head loss of the filter increase, then water level in the backwash pipe rises gradually.
- When the water level over the top of the backwash pipe, siphon is established and water starts to flow through the backwash pipe. This backwash process is full-automated. So it does not need operators and electricity !

KOBELCO ECO-SOLUTIONS Co., Ltd.
International Operations Department
1-4-78, Wakihama-cho , Chuo-ku, Kobe 651-0072, JAPAN

URL: http://www.kobelco-co.co.jp/english/
E-mail h.tochiki@kobelco-eco.co.jp
TEL: +81-78-232-8123 FAX: +81-78-232-8083

Team E-Kansai

Performance /specifications of technology / product

Model number	Inner Diameter (mm)	Filtration Area (m2)	Filter capacity (m3/h)		Weight during Operation(ton)	Model number	Inner Diameter (mm)	Filtration Area (m2)	Filter capacity (m3/h)		Weight during Operation(ton)
			7.5m/h	5m/h					7.5m/h	5m/h	
1	900	0.7	5	3	5	⋮	⋮	⋮	⋮	⋮	⋮
2	1,200	1.2	9	6	8	14	4,900	18	135	90	100
3	1,500	1.8	13	9	12	15	5,500	24	175	115	125
4	1,800	2.6	19	13	16	16	6,200	29	215	140	150
⋮	⋮	⋮	⋮	⋮	⋮	17	6,700	35	260	170	180

Usage examples / result

- We have already provided more than 2,000 units to rural areas in Japan giving many people the access to clean potable water.
- And we also provided ASF in Vietnam and Cambodia.

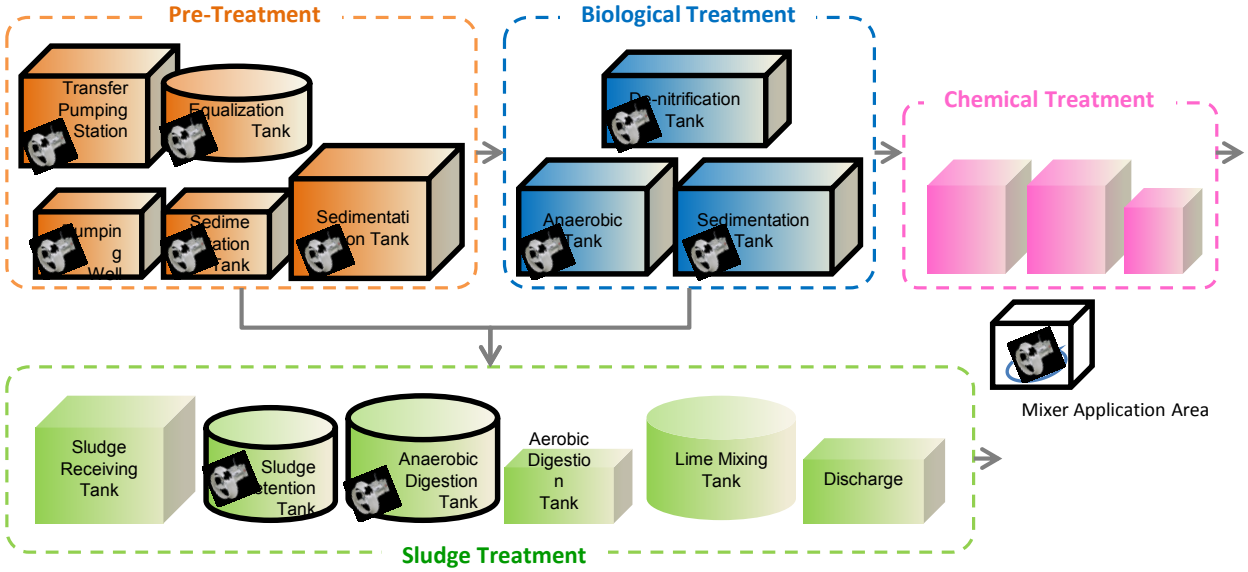
Team E-Kansai

Submersible mixer Series

– ShinMaywa Industries, Ltd. –

•Save energy with pewerful agitation.Meet wide range of needs with various lineups.

SM Series 0.25kW–15kW



Features

- High reliability and durability
- Easy maintenance
-Simple installation and adjustment

Overview (Technical principles, actions, etc.)

•ShinMaywa sbmersible mixer can be installed in various applications.

•With the variety of its lineups, we will address requirements for agitation, mixture and water flow generation in water-related facilities,including sewage treatment, wastewater treatment of industry and water garden.

•ShinMaywa submersible mixer incorporates advanced technologies of ShinMaywa, through the experience of development of water treatment equipment.

ShinMaywa Industries
International Business Group Sales & Marketing Dept., Fluid Div.
3-2-43, Shitte, Tsurumi-ku, Yokohama, 230-0003, Japan

http://www.shinmaywa.co.jp/
E-mail overseas@shinmaywa.co.jp
TEL +81-45-584-1322 FAX +81- 45-575-2286

Team E-Kansai

Performance /specifications of technology / product

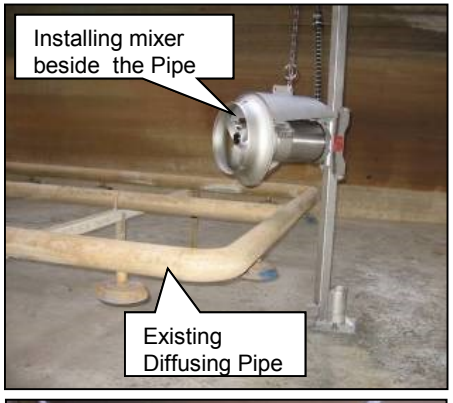
50Hz			60Hz			Model
Motor		Rated Current(A)	Motor		Rated Current(A)	
Output(kW)	Pole(P)		Output(kW)	Pole(P)		
0.25	4	2.3	0.25	4	2.0	SM250
0.4	4	2.8	0.4	4	2.5	SM400
0.75	4	4.4	0.75	4	4.2	SM750
0.9	6	5.8	1.1	6	5.7	SM15JA・JB
1.5	6	7.8	1.5	6	7.4	
1.5	6	7.8	1.5	6	7.4	SM15A・B

50Hz			60Hz			Model
Motor		Rated Current(A)	Motor		Rated Current(A)	
Output(kW)	Pole(P)		Output(kW)	Pole(P)		
2	4	8.4	2.4	4	9.7	SM24JA・JB
2.8	6	15.3	2.8	6	14.9	SM28A・B
3	6	15.8	3	6	14.1	SM30A・B
4	6	19	4	6	18	SM40A・B
5	10	25.8	5	12	29.9	SM50A・B
7.5	10	39.6	7.5	12	44.6	SM75A・B
8.8	4	38	10.5	4	43	SM110A
13.5	4	59	15	4	62	SM150A

Usage examples / result

For Flow Controlling Tank of Pharmacautical Factory

【Problem】
Water level rising due to increase of inflow was causing overload of aeration blower.
【Our Proposal】
Chainging the prevention measure for sludge sedimentation from "aeration" to "agitation". Output of submersible mixer is not affected by water-level changes and energy is also saved by its smaller motor output comparing to air blower.
【Result】
In this tank, pH-controlling has also been carried out at the same moment, but sometimes its failure leads to unstable performance of the facility. Submersible mixer also solved this problem by stabilizing pH.



Before	
Model	Air Blower
Output	15.0kW
Quantity	1unit／tank
Total Output	15.0kW

80% Down

After	
Model	Submersible Mixer
Output	1.5kW
Quantity	2units／tank
Total Output	3.0kW

Team E-Kansai

AERATOR S-1

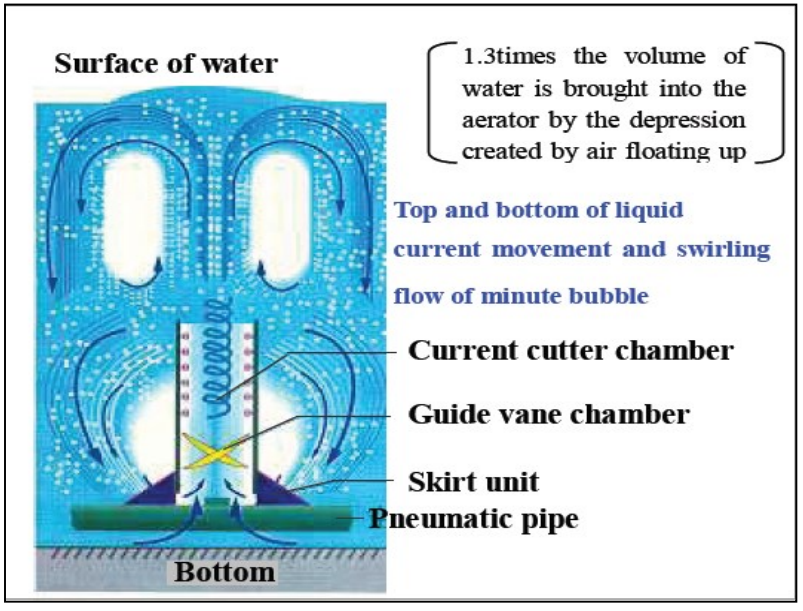
SUZUKI SANGYO Co.,Ltd.-Company

• Powerful Aeration System

The suggestion of the efficient
the waste water treatment system
and reduction of large cost by AERATOR S1

Allows installation without
draining wastewater

AERATOR S1



Features

1. Considerable Reduction of Electric Expenses
2. High and Stable Oxygen Absorption Ratio
3. Maintenance free -The Regular Cleaning is unnecessary
4. No Trouble There is not stopped up
5. The Sludge doesn't Pile up in the Tank Bottom
6. The Introduction Construction is Easy

Real retirement period by the equipment introduced is 1.5 to 2 years.

Overview (Technical principles, actions, etc.)

A static air diffuser without moving parts has been developed for aeration of the active sludge tank.

・Processing performance improvement of BOD.COD ・Contact and stirring of gas and liquid by strong aeration

・Improvement of stir purification oxygen dissolution efficiency ・Cancellation of stink ・Reduction of waste sludge

Suzuki Sangyo Co., Ltd.

3-15 Yamada-Hisada-cho,Nisikyo-ku,Kyoto 615-8263,Japan

http://www.mmm.ne.jp/~suzuki.sa/
E-mail suzuki-2@po.mmm.ne.jp
TEL +81-75-392-7577 FAX +81-75-392-7527

Team E-Kansai

Performance /specifications of technology / product

Model	Dia.	Length	Material			Weight	Air capacity per unit			Aeration area per unit
							Stand-ard	Upper limit	Lower limit	
	mm	mm	Main unit	Skirt unit	Connector	kg	㎥/min	㎥/min	㎥/min	㎡
S-1	125	680	ABS	SUS	SUS Flange	8	1.0	1.4	0.7	Approx.6.0

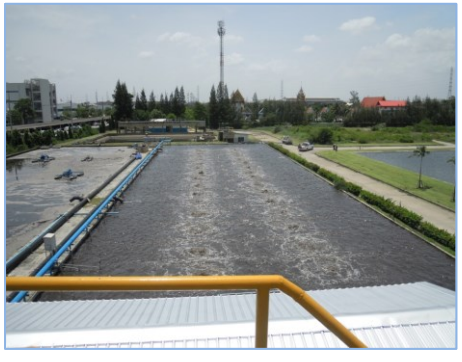
Usage examples / result

In Japan, as the aeration device of waste water treatment tank such as dyeing factories and food factories, there is a track record introduced in more than 500 factories. In overseas has introduced track record in food factories and industrial wastewater and palm oil mills, rubber factories, chemical plants, etc. mainly in Southeast Asia.

Surface aeration system 66kw
⇒AERATOR S1 system 30kw
Electricity bill has been significantly reduced

Malaysia SD Palm Oil factory wastewater treatment system , BOD20 Plant. Influent volume 960㎥/D by AeratorS1 72sets

Indonesia P Palm Oil factory ,Ministry of the Environment co-benefits environmental technologies Japan - Indonesia bilateral cooperation projects 2014 by Aerator 12 sets



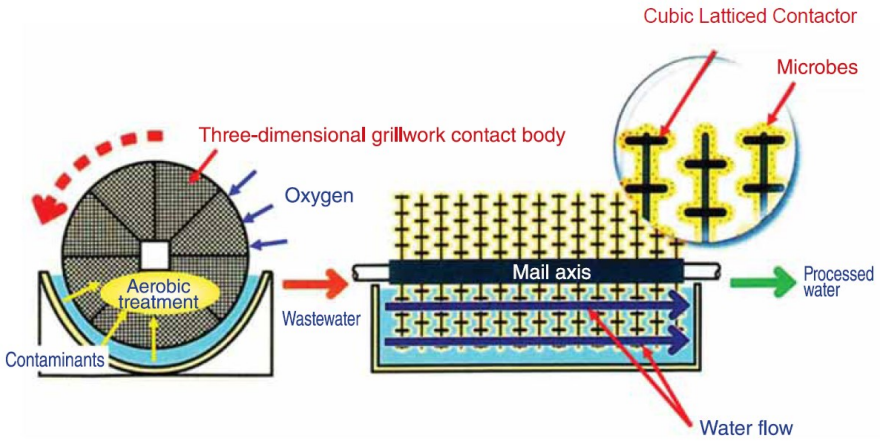
Thailand AN Industrial Park wastewater treatment system. Influent volume 6,000 ㎥/D. Lagoon type by AeratorS1 32sets

Team E-Kansai

Cubic Latticed Contactor ESROTAE

SEKISUI AQUA SYSTEMS Co., Ltd.

Suitable for processing organic wastewater, simple and conventional maintenance and management through energy efficient mechanism and a 50% reduction of sludge



Features

- **Consumes approx 40% lower power than conventional wastewater treatment equipment using activated sludge.**
- **Generates less than half the quantity of sludge generated from equipment using activated sludge.**
- **Withstands inflow load changes and ensures ease of use and maintenance.**

Overview (Technical principles, actions, etc.)

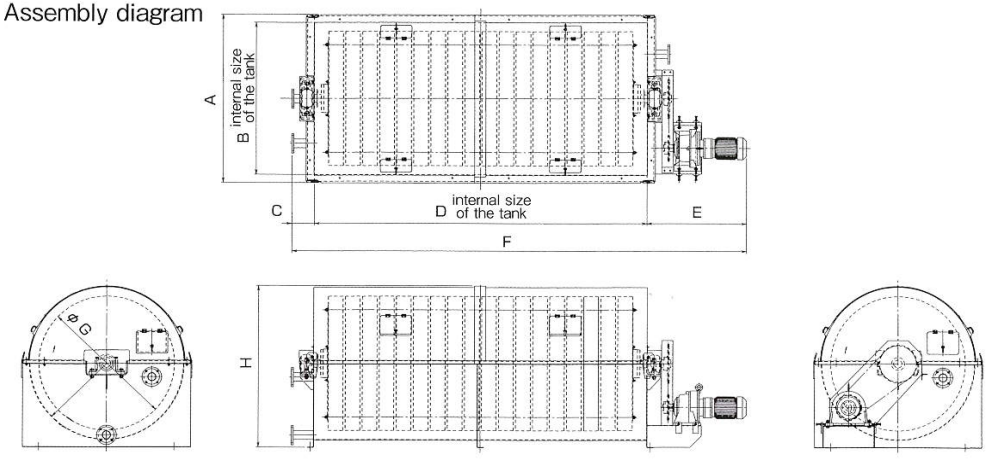
The ESROTAE is wastewater treatment equipment that uses the microbe film on the cubic latticed contactor. The contactor rotates slowly while approximately 40% of the contact body is immersed in wastewater, takes in oxygen from the air, adsorbs contaminants from the wastewater, and breaks down the contaminants aerobically with the work of microbes. The microbes proliferate in process of wastewater decomposition, and those that loose activity fall off and they are separated in the sedimentation layer of the equipment.

SEKISUI AQUA SYSTEMS Co., Ltd. Plant Engineering Division
21st Floor, Tower West, Umeda Sky Bldg.,
1-1-30 Oyodonaka, Kita-ku, Osaka 531-0076, JAPAN
URL: http://www.sekisuia.co.jp/english/
Email: hp-plant@sekisui.com
TEL: +81-6-6440-2511 FAX: +81-6-6440-2515

Team E-Kansai

Performance /specifications of technology / product

- Assembly diagram



Cubic Latticed Contactor

Type	A	B	C	D	E	F	G	H	motion power	water tank volume	empty weight	operating weight
TYPE Ⅰ	1538	1360	200	2950	662	3812	1200	1486	1.5kW	1.78㎥	1.6t	4.3t
TYPE Ⅱ	2500	2250	205	3552	953	4710	2000	2557	2.2kW	6.50㎥	4.5t	13.9t

Usage examples / result

- In Japan : More than 200 units (model type Ⅰ and type Ⅱ) have been delivered mainly for the wastewater treatment of food processing factories and chemical factories.
- Examples overseas : 1. China: Domestic wastewater treatment (type Ⅰ/Ⅱ, about 70 units)
  2. Indonesia: Domestic wastewater treatment (type Ⅰ, 2 locations)
  3. Bahrain: Domestic wastewater treatment (type Ⅱ, 1 unit) etc.

Team E-Kansai

Environmental purification countermeasure using Activated carbon

DAINEN CO., LTD

For 40 years we have developed manufacturing technology to provide high quality activated carbon.

Features

- We are able to provide exactly what you need because of our wide range of activated carbon products which is produced from coal, coconut-shell and wood.
- Activated carbon has very wide surface area around 1000m^2/g and it is able to adsorb various substance.
- Granular activated carbon can be reused except for special usages, and recycled by our companys' equipments.

Overview (Technical principles, actions, etc.)

Activated carbon is a product made of coal, coconut shell & charcoal with fine pores (Submicron pore: under 0.8nm, Micro pore: 0.8-2nm, Meso pore: 2-50nm, Macro pore: over 50nm) that is produced by carbonization & activation process. Fine pores exist inside of carbon and the surface area is extremely wide so it can absorb various materials.

Dainen Co., Ltd.
Environment Department
3001, Nakashima, Shikama-ku, Himeji, Hyogo 672-8555, JAPAN

URL: http://www.dainen.co.jp/
E-mail kankyou@dainen.co.jp
TEL: +81-79-234-7189 FAX: +81-79-234-7179

Team E-Kansai

Performance /specifications of technology / product

○ liquid phase

Use	Brand	Materials	Form	Grain size
For drinking water	PL-WPS	Wood	Powder	- 75μm
	PL-C1SK	Coal	Fracture	0.85~2.00mm etc.
	PL-1S	Coconut-shell	Fracture	0.50~2.36mm etc.
For waste water	PL-C1S	Coal	Fracture	0.50~2.36mm etc.
	PL-Y1S	Coconut-shell	Fracture	0.50~2.36mm etc.
	PL-1P	Wood	Powder	- 75μm
	PL-C1P	Coal	powder	- 75μm

○ Gas phase

Use	Brand	Materials	Form	Grain size
For air cleaner, Deodorizing, solvent recovery	PG-1A	Coconut-shell	Fracture	2.36-4.75mm etc.
	PG-1Z	Coal	Pellet	φ4mm, φ7mm
	PG-HZ	Coconut-shell	Pellet	φ4mm
For odorous gas (Chemical adsorption)	PGH-1	Coconut-shell	Fracture	2.36-4.75mm
	PGH-2	Coconut-shell	Fracture	2.36-4.75mm
	PGN-2	Coconut-shell	Fracture	2.36-4.75mm
	Iodine carbon	Coconut-shell	Fracture	2.36-4.75mm
For adsorption removal dioxin	DCP-30	Coconut-shell	Powder	-45μm
	DCP-30S	Coconut-shell		-75μm
	PGD-CZ	Coal	Pellet	φ4mm, φ7mm

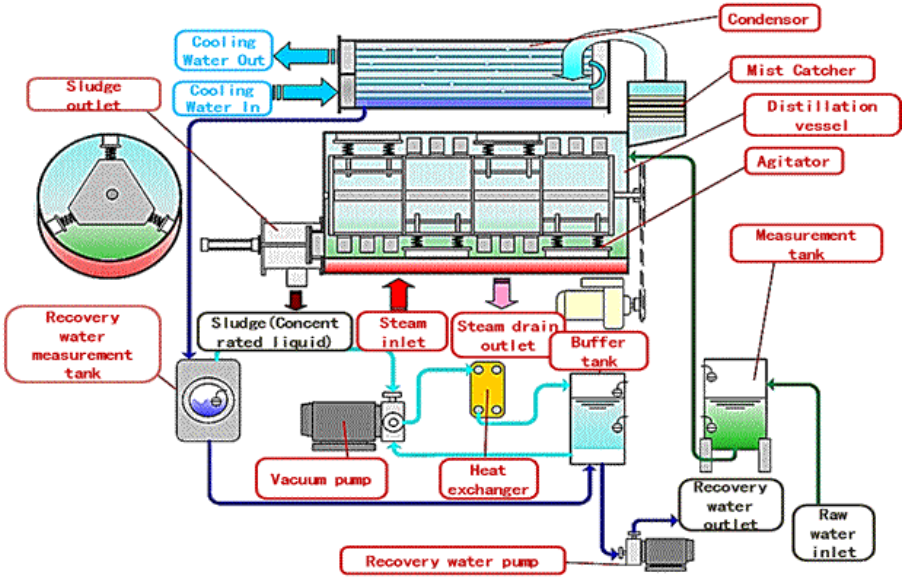
Usage examples / result

・Local governments (water purifying plants, waste incineration plants, night soil disposal plants.
・Domestic plant construction company
・Domestic water filter companies, disposable body warmer makers, incense stick makers etc.

Team E-Kansai

Decompression-Dehydration-Drying Device Take-GEN - Daiwa Chemical Industry Co., Ltd. -

Pursuing zero-emission goal



Feature

- **Distilling and dehydrating all kinds of waste water or sludge under a reduced pressure state to reduce industrial waste.**
- **Despite of treating waste water, Take-GEN can also treat and recycle high-boiling-point solvent,**
- **Multiple model can match different kinds of industrial amount.. ※Line-up: Take-GEN25～1000 type.**
- **Using Take-GEN500 type to treat waste water, 90% can be concentrated. About 850t of industrial waste per year could be reduced,**

Summary

Take-GEN can separate moisture from high concentrated waste water or high-water-content sludge by vacuum distillation method.
By concentrating, dehydrating, drying industrial waste stuff, changing waste into resources can be easily achieved.
Now Take-GEN is exporting to China, Thailand, Indonesia, Taiwan, Korea and etc. from Japan. We also have local branch dealing with manufacturing and designing of Take-GEN. We will continue to enlarge our business mainly in China and Thailand in the future.
You can choose “Batch operation” or “Continuous operation”/Moisture content of sludge after treating can be reduced to 1%~5%/Odor and noise problem has been well concerned./Save space.

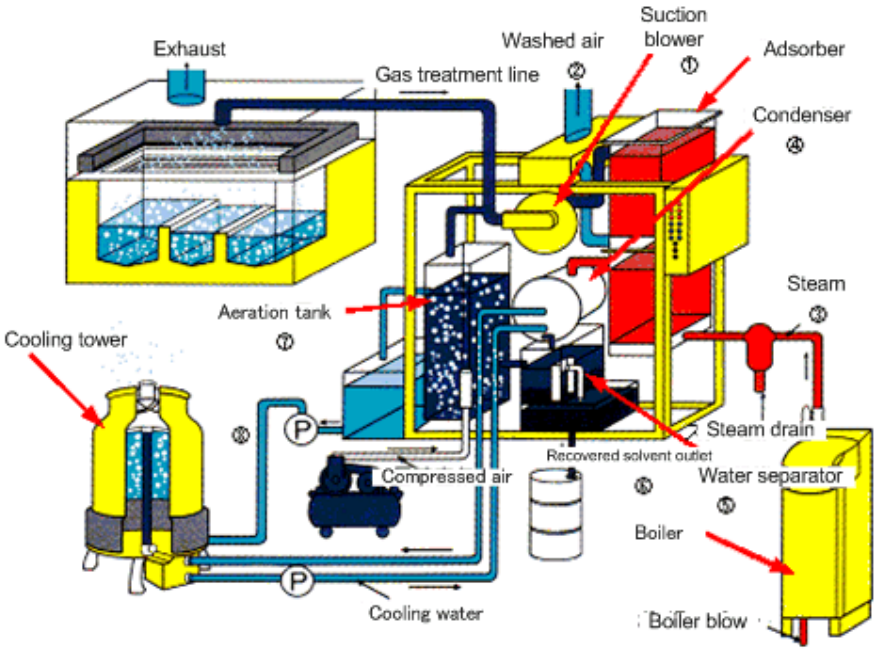
Daiwa Chemical Industry Co., Ltd. Sales Dept.
5-8-6 Minamiokajima, Taisho-ku, Osaka-city, 551-0021, Japan.
URL: http://www.daiwakagaku.com/en/index.html
E-mail daiwa@daiwakagaku.com
TEL:+81-6-6553-5673 FAX :+81-6-6552-5618

Team E-Kansai

Solvent recovery device
(Activated carbon adsorption type/VOC treating device

– Daiwa Chemical Industry Co., Ltd. –

Pursuing zero-emission goal



Feature

TAKE is a kind of solvent recovery device of metal cleaning field, which was developed based on manufacturing and developing of freon dry cleaning device.
Despite of metal cleaning filed, nowadays, TAKE is also widely used for treating exhaust gas, in many industrial areas such as paint, printing, chemical and industrial products manufacture fields. Until now, we have about 200 delivery record of TAKE all over the world.
TAKE is not only a high efficiency device, it is also designed compactly to save space and reduce initial/maintenance cost.
Now we have delivery record until 300L, please consult us with specification.

Summary

This device is composed by 2 independent unit: VOC gas sorption unit by using granular activated carbon, and regeneration/drying unit by steam.
It is a system aimed to recycle solvent by using steam and activated carbon.
The key to reduce load of environmental pollution is dissipation prevention from the emission source. TAKE is always perusing the goal of zero-emission.
Now, we have delivery record of TAKE in Japan, China, Malaysia. We will continue to enlarge our business mainly in China and Thailand in the future.

Daiwa Chemical Industry Co., Ltd. Sales Dept.
5-8-6 Minamiokajima, Taisho-ku, Osaka-city, 551-0021, Japan.

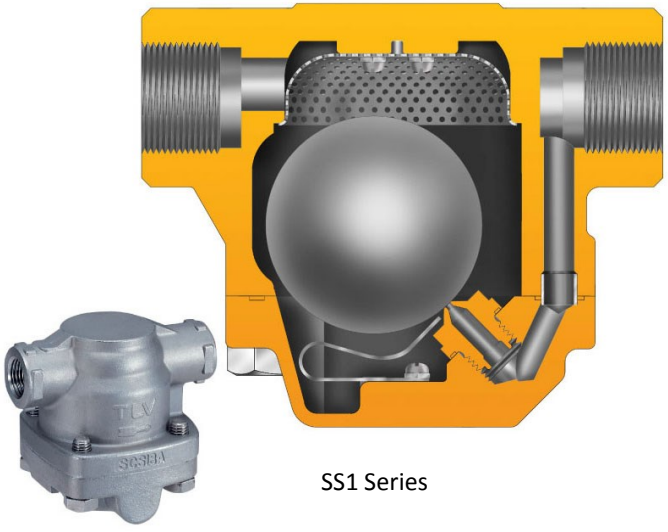
URL: http://www.daiwakagaku.com/en/index.html
E-mail daiwa@daiwakagaku.com
TEL:+81-6-6553-5673 FAX :+81-6-6552-5618

Team E-Kansai

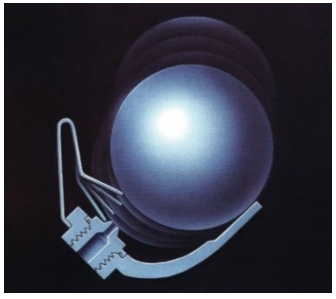
Energy-Saving Free Float Steam Trap SS1 Series

TLV Co., Ltd.

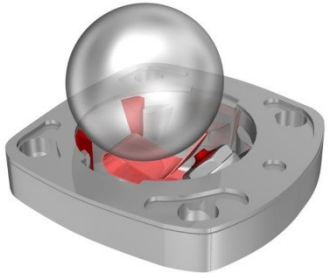
Free Float Steam Trap with the Lowest Energy Costs in the World



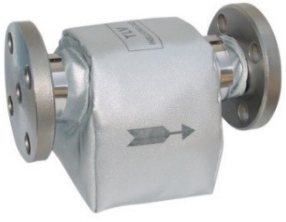
SS1 Series



Automatic bimetal air vent



3-point seating and precision ground float



Specially designed insulating cover (Optional)

Features

The TLV Free Float SS1 Steam Trap Series is the world's #1 energy saving steam trap, reducing steam use and CO_2 emissions.

- **Precision-ground Spherical Float and Three-point Seating**

High sealing performance with no steam leakage.

- **Stainless Steel Components Ensure High Durability**

The body and the valve seat use corrosion and rust-resistant stainless steel, thus maintaining the initial performance for a long time.

- **Built-in Bimetal Automatic Air Vent**

The built-in air vent responds to temperature and promptly exhausts initial air in the piping, thus making it possible to start operating the trap immediately after the supply of steam.

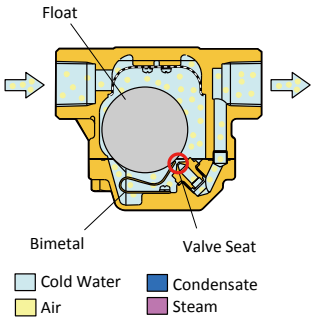
TLV International, Inc.
881 Nagasuna, Noguchi, Kakogawa, Hyogo 675-8511, JAPAN
URL http://www.tlv.com

Team E-Kansai

Overview (Operation)

1. Start-up Air and Cold Condensate Discharge

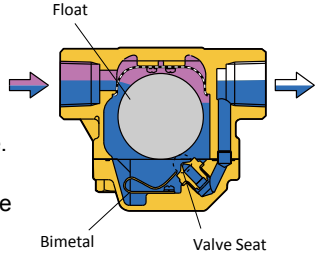
At start-up the system is cold, causing the bimetal air vent strip to hold the float off of the valve seat. This allows rapid discharge of air and cold condensate when steam is first supplied to the system.



2. Condensate Discharge

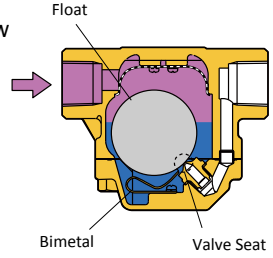
If the temperature of the condensate rises above 90 °C (194 °F), the bimetal air vent strip allows the valve to close.

The float lifts off the valve seat as condensate levels rise, discharging hot condensate.



3. Closed Position

When the condensate flow rate decreases, the lowering level of condensate causes the float to fall, resting on the valve seat. A water seal over the valve seat prevents steam loss. The bimetal is still curved, not affecting the float movement. As the condensate flow rate changes, steps 2 and 3 will repeat in cycles.

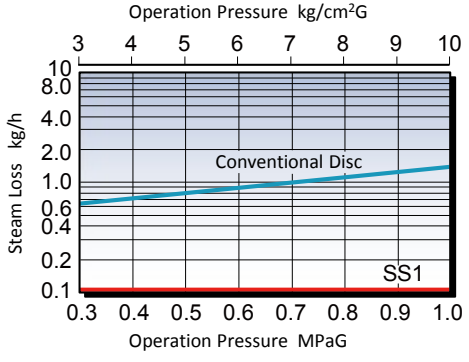


Effects

Up until now, the most commonly used steam traps are disc type, but as the graph below shows, even a new disc trap loses approximately 1 kg/h of steam. Additionally, while in use, each year the amount of steam loss increases. In comparison, the SS1 Series loses less than 0.1 kg/h, and keeps the loss at that level over an extended period.

Therefore, the steam loss from 100 properly operating steam traps is 360 tons per year, or approximately 1.44 million yen. The equivalent amount of CO_2 emissions saved is approximately 70 t-CO_2/year (operating 4,000 hours/year, with steam at 4,000 yen/ton).

In reality there is also steam leakage from failed traps, that makes the effectiveness even greater.



Steam Loss (Condensate Load: 5 kg/h)

Introductory Track Record

Introduced to large steam-using plants worldwide such as oil refineries, chemical, steel, and food.

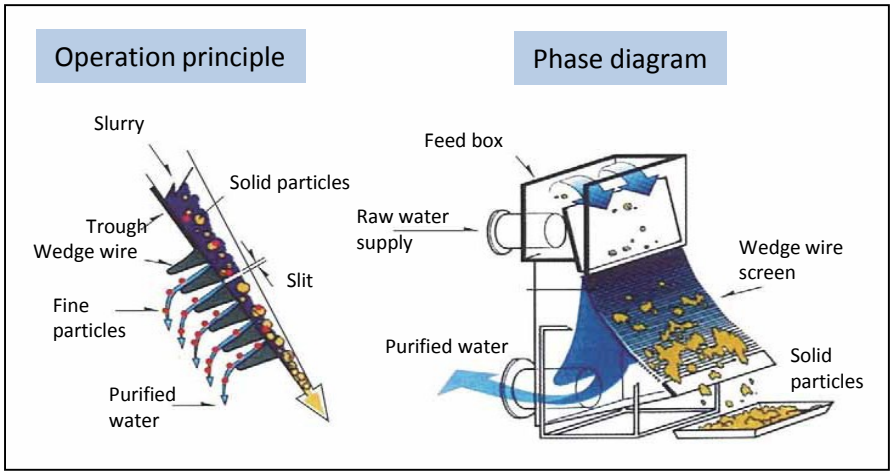
Joint-recipient, with Nippon Petroleum Refining Co. Ltd. (currently JX Nippon Oil & Energy Corporation), of the Ministry of Economy, Trade and Industry's 2009 Energy Conservation Grand Prize for Excellent Energy Conservation "Director General Prize of Agency for Natural Resources and Energy" for reduction of leaks from approximately 100 thousand steam traps spread across seven plants, resulting in an estimated savings of 18 ML (113,000 US barrels) of crude oil per year.

Team E-Kansai

Inclined Solid-Liquid Separating Unit “ULTRA TN SCREEN”　Toyo Screen Kogyo Co.,Ltd.

■ Solid and Liquid separating screen for drainage treatment and production processes.

Application for dyeing drainage



Operational principle

Features

- Based on a strong wedge wire screen with a fine slit width.
- A product of simple construction that ensures ease of maintenance and prevents clogging of the screen as much as possible.
- Installed in a small area with few restriction with on operating power required.

Overview (Technical principles ,action, etc.)

The inclined solid-liquid separating screen is used for wastewater treatment and production stages. The screen has a large number of slits comprised of wedge shaped. As shown, when slurry is provided from the upper part in the tangential direction, the screen will continuously separate solid foreign particles that are as large as or large than half the slit opening width. There is a distance between the opening of each slit and the point of separating solid foreign particles from the slurry. The width of the point that separates solid foreign particles is half the width of the opening of the slit, which reduces the clogging of the screen as much as possible. Furthermore, the screen collects solid foreign particles continuously.

Toyo Screen Kogyo Co., Ltd.　Sales Department　2-10-6 Kozen Ikaruga-cho Ikoma-gun, Nara 636-0103 JAPAN

TEL: +81-745-70-1700　FAX: +81-745-70-1701　**Email: sales_dep@toyoscreen.co.jp**　**URL: http://www.toyoscreen.co.jp/**

Team E-Kansai

Applications, Capacity

Applications

- Wastewater treatment at various plants for chemical, food, textiles, dyeing, leather products, etc.
- Wastewater treatment, classification, dewatering, and recovery at processing plants for agricultural and marine products.
- Solid and liquid separation at production process stages, such as chemical and food production stages.
- Treatment of public utility sewage, community sewage, and wastewater from multistory buildings.
- Intake gates of river water.

Capacity

Slit width vs. rough capability (per ㎡), classified by treatment water type （㎥／h）

Slit	0.5mm	0.75mm	1.0mm	1.5mm
Dyeing cleaning drainage	50	60		
Fruit processing drainage	50	60	70	
Fish processing drainage		50	55	65
Disposal sewage			60	80
River water		100	110	130

Usage examples, Introductory track record

- A fine screen for drainage treatment with a sales record of accomplishment of more than 30,000 units in Japan.
- Factory effluent treatment, water treatment for fiber industries, paper mills, resin plants, sugar plants, tapioca starch plants etc.
- Countries: Thailand, Vietnam, Indonesia, Malaysia, Korea, China(including Taiwan), India, Iran, Saudi Arabia and others

Fish processing drainage

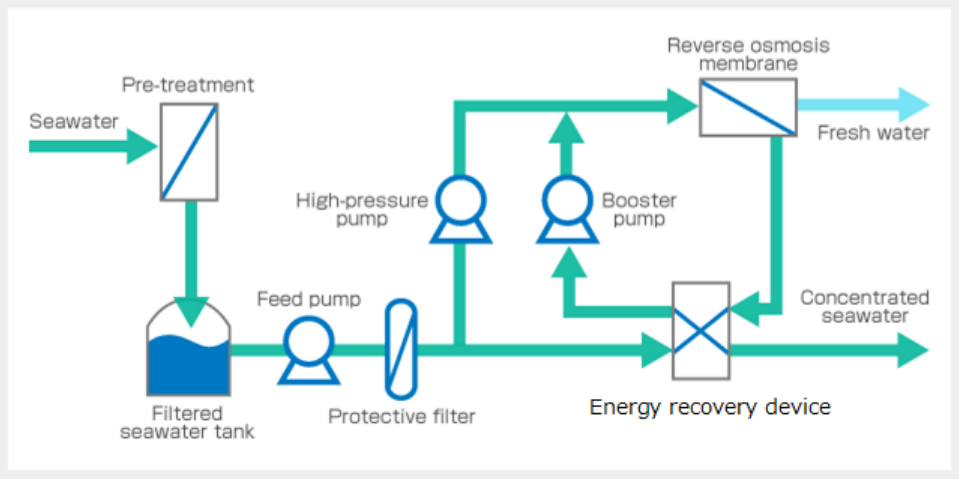
Community plant of an Industrial park (Thailand)

Team E-Kansai

Hollow Fiber RO Seawater Desalination System

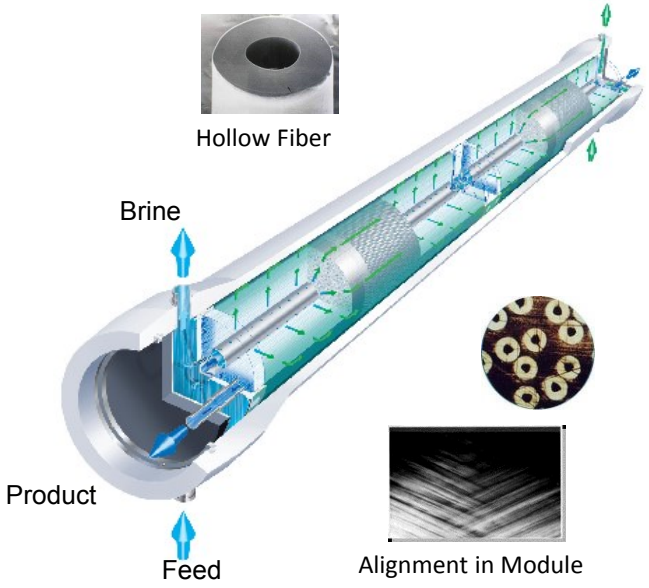
Toyobo Engineering Co., Ltd.

Seawater Desalination System with low running cost and stable operation



Process flow（with Energy recovery）

Hollow Fiber RO Membrane Module-HOLLOSEP®



Features

-Employs Toyobo HOLLOSEP®, a highly functional and reliable reverse osmosis membrane that has been used in large-scale seawater desalinization systems around the world and in Japan.
-Can also be used to produce demineralized water of pure-water quality from salt-contained well water.
-Can save energy consumption by utilizing Energy recovery device

Overview (Technical principles, actions, etc.)

Sea water is permeated through Hollow Fiber RO membrane made of cellulose triacetate (CTA), removing various saline, and then supplied as fresh water for industrial water and/or drinking water. The membrane has superior chlorine tolerance and prevents biological fouling by organism in seawater, and therefore has high durability and long membrane life. With this membrane the system can be stably operated with low running cost, by saving membrane exchange cost, chemical cleaning/consumption cost (by low cleaning frequency), and overall maintenance cost.

Toyobo Engineering Co., Ltd.
Engineering Section No.2, Engineering Department
2-1-16 Dojima, Kitaku, OSAKA 530-0003 Japan
URL; http://www.toyobo-eng.co.jp
E-mail yoshinari_ohira@toyobo-eng.co.jp
TEL: +81-6348-3936 FAX: +81-6-6348-4294

Team E-Kansai

Performance /specifications of technology / product

-Capacity ： Several tons/day ～ ← to be designed for customers requirement
-Seawater TDS ： Can accept＞40,000ppm ← Many experience in Middle-east sea, including Red Sea, containing much organism
-Product TDS ： ＜500ppm ← can be reduced, depends on seawater quality
-Availability ： Experience of ≧99%
-Recovery ratio ： 30%～60% ← to be optimized according seawater quality
-Cleaning frequency ： 1 time /year （Normal condition）

Usage examples / result

【Application of Hollow Fiber RO Seawater Desalination System】
-Ensuring supplies of drinking water and domestic water on off-shore islands
Especially small unit for domestic water supply in Resort Island around South-east Asia
-Industrial water supply to Power plant on the coast →Example(A)
-Drinking water and domestic water on ships
-Manufacturing mineral water from deep ocean water
-Desalinization of water with a high salt concentration and well water near the seashore

【Other application with Hollow Fiber RO membrane】
-Advanced Livestock Wastewater Treatment System →Example(B)
-Wastewater Recovery System
-Seawater Concentration System-Salt production →Example(C)
-Concentration and Volume Reduction System-Reducing waste treatment cost
-Pure water system-Analysis water for hospitals →Example(D)

Example(A)

Example（B)

Example（C)

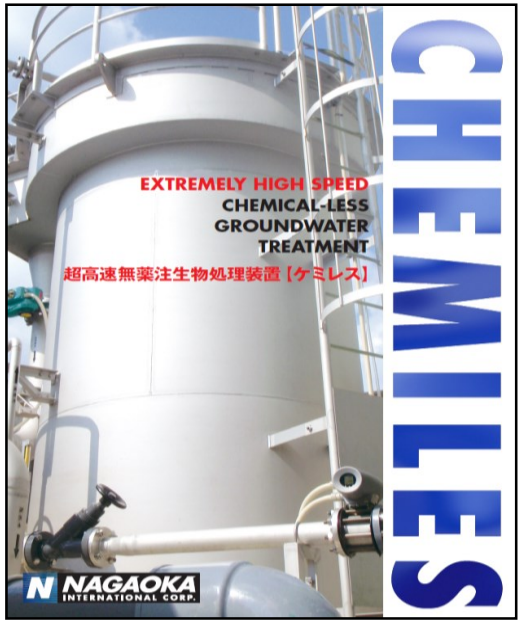
Example（D)

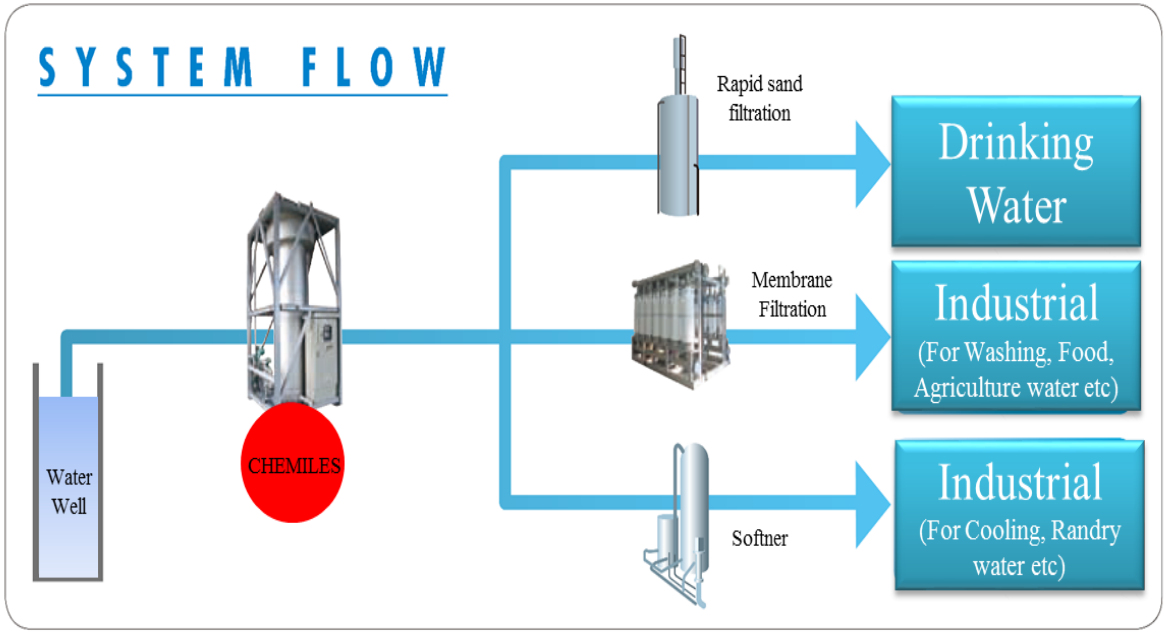
Team E-Kansai

Chemical-less Groundwater Treatment System “CHEMILES”

NAGAOKA INTERNATIONAL CORP.

CHEMILES remove iron, manganese, ammonium nitrogen and arsenic without any chemicals.





Features

【No chemilcals】 Chemiles is easy maintenance and low running cost because no chemicals are used.

【High speed 】 Liner velocity is 500m/D because of adapting contact oxidation and biological treatment. So Chemiles need minimum footprint.

【Highly concentration】 Chemiles were adapted in high concentration raw water site (ex. Fe:max40mg/L、Mn:max4mg/L、NH4:max4mg/L)

Overview (Technical principles, actions, etc.)

Chemiles is the biological treatment system for groundwater using no chemicals. CHEMILES can remove iron, manganese, ammonium nitrogen and arsenic without any oxidant and coagulant. The nozzles on the top of chemiles supply oxygen in the air to raw water and dissolved oxygen in the raw water became almost saturated. By using these oxygen, Iron is removed by contact oxidation and manganese and ammonium nitrogen are removed by biological treatment. And our original WP back wash system stabilizes chemiles operation in the high speed operation.

NAGAOKA

Nagaoka International Corp. First sales group

6-1, Nagisa-cho, Izumiotsu, Osaka, Japan, 595-0055

URL：http://www.nagaokajapan.co.jp/

E mail：nicinfojpn1@nagaokajapan.co.jp

TEL：+81-725-21-5752 FAX：+81-725-21-2266

Team E-Kansai

Performance /specifications of technology / product

Type	Capacity※1	Diameter※2	Height※2	Operation Weight
NCL-0925	10m³/h (220m³/D)	900 mm	2,500 mm	4,600 kg
NCL-1535	25m³/h (550m³/D)	1,500 mm	3,000 mm	14,000 kg
NCL-2035	50m³/h (1,100m³/D)	2,000 mm	3,500 mm	23,600 kg
NCL-2545	80m³/h (1,760m³/D)	2,500 mm	4,500 mm	50,000 kg
NCL-2845	100m³/h (2,200m³/D)	2,800 mm	4,500 mm	63,000 kg
NCL-3145	120m³/h (2,640m³/D)	3,100 mm	4,50 0mm	75,000 kg

※1 Operation time is 22 hours per day. (without washing time)
※2 Spec is subject to changes in raw water quality.

Usage examples / result

	Usage	Capacity	Raw water quality		
			Fe (mg/L)	Mn (mg/L)	NH_4^+-N (mg/L)
A	Drinking	50,000 m³/D	8.3	1.5	0.35
B	Drinking	13,200 m³/D	11.10	1.10	0.40
C	Drinking	4,500 m³/D	8.17	3.26	0.46
D	Drinking	4,500 m³/D	5.70	0.86	0.10
E	Industrial	25 m³/h	31.00	1.36	0.60
F	Industrial	52.5 m³/h	1.00	0.30	5.10

※ Chemiles satisfies Japanese drinking water regulation in all sites.

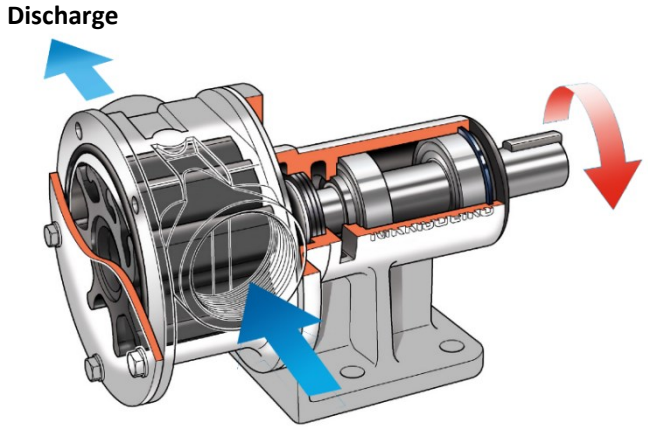
Team E-Kansai

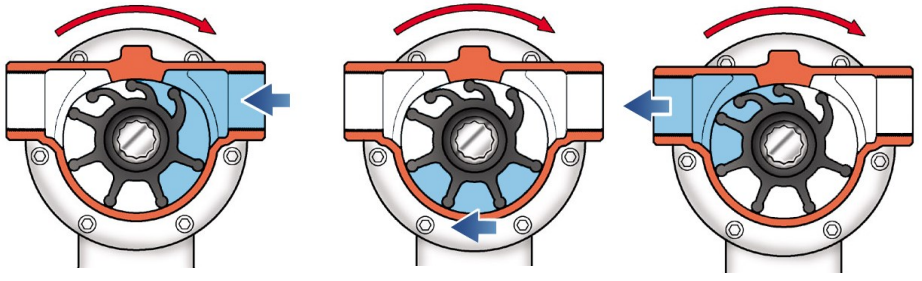
MONOFLEX PUMP

URL: http://www.nikkiso-eiko.co.jp/en.html

- NIKKISO EIKO CO.,LTD.-

Outstanding self-priming performance , Small size and maintenance are easy , From a slurry to a high-viscosity liquid.





Features

- Outstanding self-priming performance ― Suction starts when the pump starts up, without requiring priming water or a foot valve.
- Easy maintenance ― A simple pump structure is adopted. The pump can be easily disassembled/assembled since only the minimum components are mounted. Maintenance can be performed easily even without special knowledge.
- Compact and high performance ― A large capacity is ensured in its compact body. This is a displacement pump that enables a supply with stable capacity.
- Perfect for transferring slurries ― Our MONOFLEX pump is fully compatible with slurries, including a liquid containing solid matter, high-viscosity liquid, and gas-liquid mixed liquid, which are generally difficult to transfer

Overview (Technical principles, actions, etc.)

An impeller, which is mounted with a blade made of a flexible elastic material such as a synthetic rubber, adheres to the inside of the pump casing. Once the impeller starts rotating, the blade is forcibly warped in the cam section of the pump casing. When it rotates further and passes through the cam section, the blade will return to its original condition due to the elasticity of the rubber. At this point, the inside of the pump casing is vacuumed and self-priming is performed. The MONOFLEX pump is a displacement pump that performs pumping based on a difference in space (volume). Therefore, the space (volume) between the blades when one of the blades is warped in the cam section is compared with the space (volume) between the blades when the warped blade is restored to its original position. It is one of the advantageous features that the MONOFLEX pump can ensure a certain level of quantitative performance

NIKKISO EIKO CO.,LTD
1-30, Oyodonaka 1-Chome, Kita-ku, Osaka-shi, Osaka431-6126, Japan
TEL:+81-6-6452-6571 FAX:+81-6-6452-6574

NIKKISO EIKO CO.,LTD
16-2, Noguchi-cho, 2-Chome, Higashimurayama, Tokyo, 189-0022, Japan
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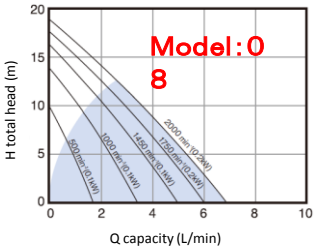
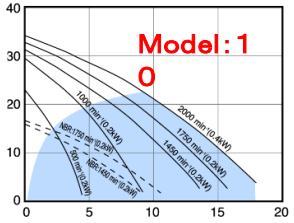
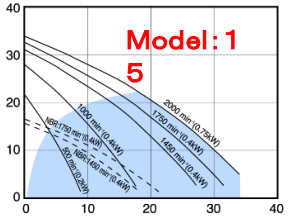
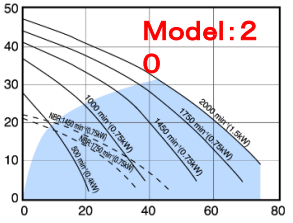
Team E-Kansai

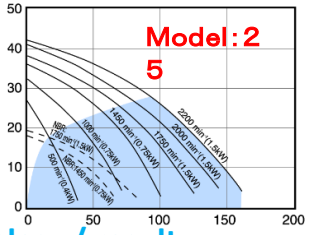
Performance /specifications of technology / product

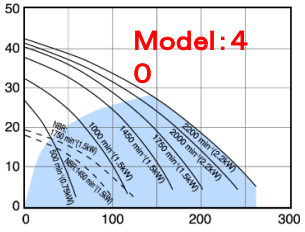


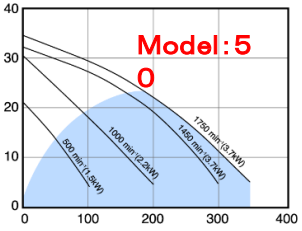


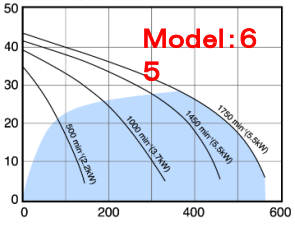






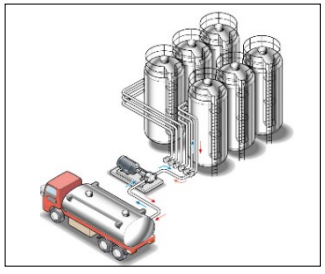




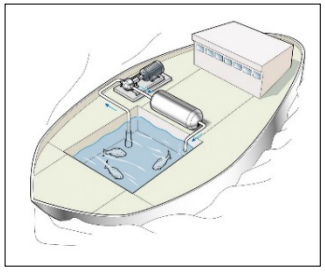


Usage examples / result

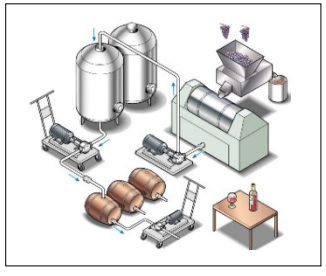
Chemical transfer(Self-priming, slurry)



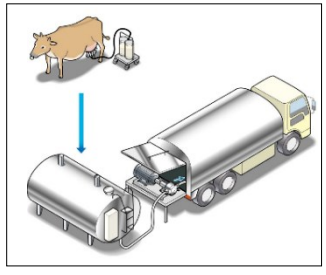
Fish boat (Self-priming, compact, maintenance)



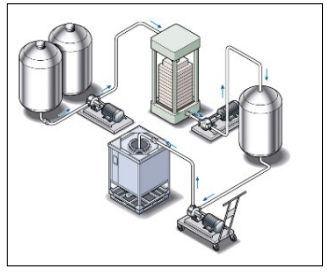
Wine(Self-priming, slurry)



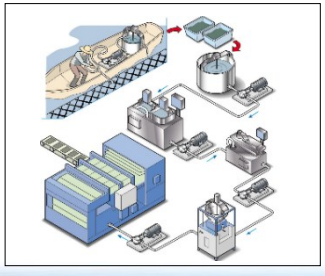
Dairy husbandry(Self-priming, compact, maintenance)



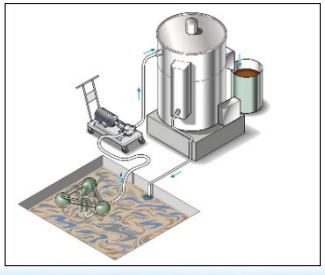
Soy sauce(Self-priming, slurry, maintenance)



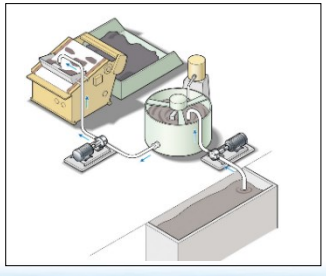
Seaweed (Self-priming, slurry, maintenance)



Scum collection(Self-priming, slurry, maintenance)



Dehydrator(Self-priming, slurry, maintenance)



Team E-Kansai

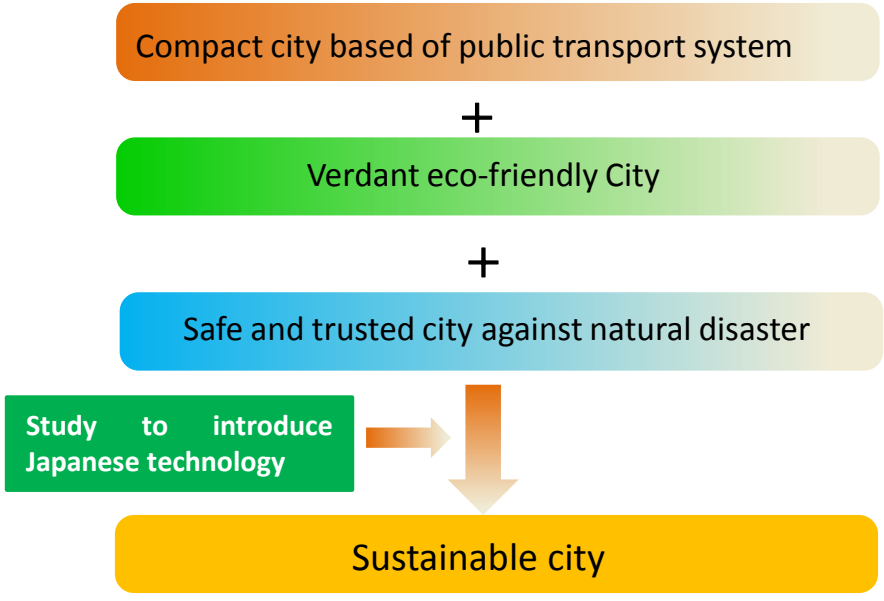
Urban planning, adopting environmental and disaster prevention technology of Japan

NIKKEN SEKKEI CIVIL ENGINEERING LTD

Studying to introduce Japanese technology according to the site situation

Example of Land Use Plan

(Chan May New City Project, Thua Thien Hue province, Vietnam)



Example of Flow-Chart on Urban Planning

Features

- Planning compact cities based of public transport system to generate footfall and reduce the environmental load in the city.
- Laying out vast tracts of green land in the city to create a citizen's oasis and restrain heat island phenomenon.
- Planning safe and trusted cities that can be resilient to natural disaster such as flood etc.,.
- Considering cost/benefit effect, study to introduce Japanese technology into planning/designing works.

Overview (Technical principles, actions, etc.)

Due to insufficiency of public transportation system, heavy traffic congestions frequently occur in Asian cities. It damages not only the economy, but also occurs environmental problems such as air pollution and noise. NIKKEN SEKKEI CIVIL ENGINEERING LTD introduces public transportation systems and plans "Networked Compact Cities" in East Asia. Furthermore, laying out vast tracts of green land in the new cities is to give a citizen the peace of mind, also to reduce radiant heat and to improve ventilation resulting restrain of heat island phenomenon. In addition, we carry out calculations of flood prediction with e.g. 100-year probability and plan to make cities resilient by the predicted results.

NIKKEN SEKKEI CVIL ENGINEERING LTD Urban Development Division
【Osaka】〒541-0054 3-6-14 Minamihonmachi,Chuo-ku,Osaka-shi
【Tokyo】〒112-0004 1-4-27 Koraku, Bunkyo-ku, Tokyo
URL;http://www.nikken-civil.co.jp/
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E-mail nonaka@nikken.jp fujiok@nikken.jp

Team E-Kansai

Image of Japanese technologies for environmental conservation and disaster prevention in Asian cities

Sewage Treatment Plant

Water Purification Plant

Flood Gate /Pumping Station

Examples of Work

Hanoi South Supporting Industrial Park,
Hanoi City, Vietnam

Chan May New Port City,
Thua Thien Hue Province, Vietnam

Overseas representative offices

Dinh Vu-Cat Hai Economic Zone , Hai Phong City, Vietnam

Team E-Kansai

— Support for all phases of your project —

Next Energy & Resources Co., Ltd.

Headquarter : 11465-6, Akaho, Komagane, Nagano, Japan
Tokyo office : 1-23-7 Nishishinjuku, Shinjuku, Tokyo,Japan
Web site : http://www.nextenergy.jp/en/

Service

Planning Phase

Master planning
Feasibility Studies(F/S)

EPCC Phase

Engineering/Procurement/
Construction/Commissioning
FEED (Front End Engineering Design)

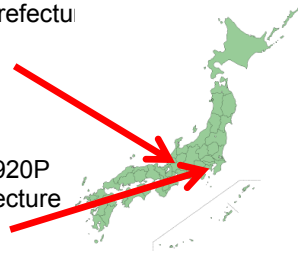
Operation Phase

Remote Monitoring
Inspections
Asset Management

Roof top type

180kW
240W × 754P
Nagano Prefectu

499kW
260W × 1920P
Chiba Prefecture



Mega PV plant

1.05MW
260W × 4,048P
Nagano Prefecture

40MW
245W × 164,736P
Chiba Prefecture

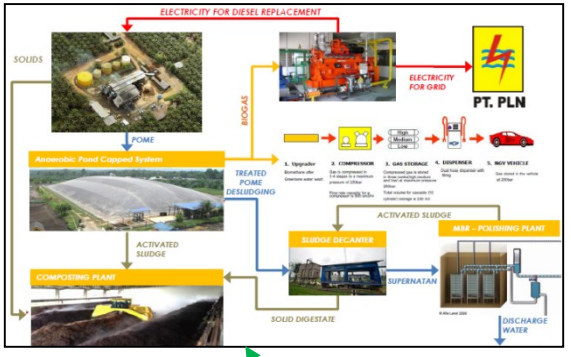
Team E-Kansai

Hybrid Biogas and PV Solar Power Renewable Power Generation Project

Next Energy & Resources Co., Ltd.

Outline of GHG Mitigation Activity

- To capture lagoon-produced biogas made from POME(Palm Oil Mill Effluent).
- The produced biogas will be collected and distributed using blowers to biogas treatment system to remove the H_2S and water content.
- The treated biogas will be utilized for a gainful use to generate electricity (2MW) with biogas engine.
- By installing 100kW Solar PV System for self consumption, maximizing the power supply to the grid.
- The project aims to contribute to the reduction of GHG emission by reducing methane gas emission from POME and CO_2 emissions from fossil fuel based grid connected power plants.



Solar PV System

Expected GHG Emission Reductions

61,197 tCO_2/year

- Reference CO_2 emissions: 66,226 tCO_2/year

  Emissions from methane gas emitted from POME : 56,562tCO2/year
  Emissions from grid electricity displaced by biogas power generation : 9,664tCO2/year

- Project CO_2 emissions: 5,029tCO_2/year

  Methane emissions from effluent treatment system without biogas plant, affected by the project activity:

Site of JCM Study

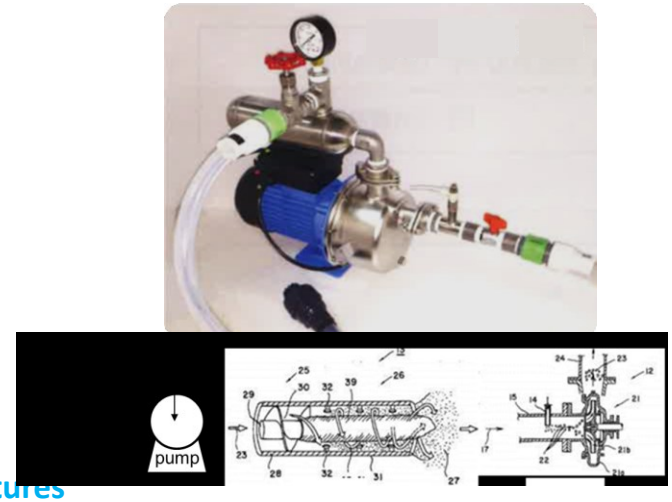
Team E-Kansai

Ultra Fine Bubble Generator & Clewa

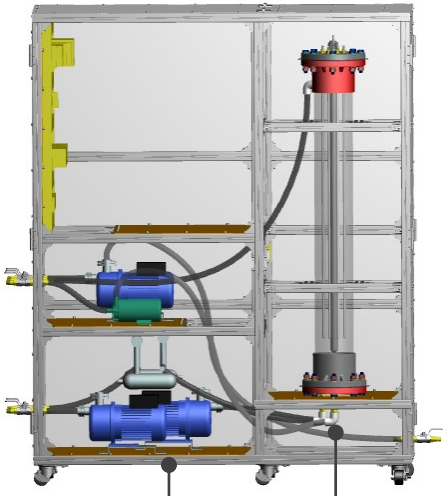
Hack International Co., Ltd.

A clean and environmental friendly technology for water treatment

Ultra fine bubble generator



Clewa



Features

Ultra fine bubble generator

- The product can enhance the amount of dissolved oxygen in water, so it has potential for promoting biological activity of organisms.
- The negatively charged bubbles can boost the nutrient adsorption of plants, leading to higher activity of plant roots and reduction of fertilizers usage.

Clewa

- The product is a combination of advanced technologies such as ozone, photo-catalyst, UV, and ultra fine bubble.
- The main products are CO2 and H2O which are environmental friendly.
- There are less wastes production and the after-treatment procedures can be simplified.

Overview (Technical principles, actions, etc.)

Ultra fine bubble generator

① Air is sucked in by negative pressure of the pump.
② The mixer is pressurized and cuts out liquid and vapor simultaneously to produce cavitation effect.
③ Bubbles are emitted from the nozzle.

Clewa

The waste water circulates between AOP device and ultra fine bubble generator and finally becomes clean water,
Ozone, UV, and fine bubbles can produce OH radicals to oxidize organic substances in raw water,

Hack International Co., Ltd.

4F.-2, No.77, Sec. 2, Dunhua S. Rd., Da'an Dist., Taipei City 106, Taiwan

URL: http://www.hackjapan.co.jp/

E-mail

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HACK International

Performance /specifications of technology / product

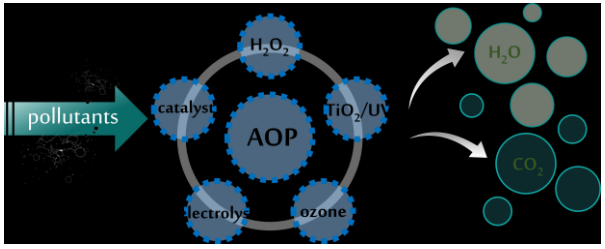
Characteristics of ultra fine bubble

- Negatively Charged
- Self-pressurized
- Increase in surface area
- Reduction of buoyancy

Applications

- Sewage treatment
- Organic synthesis
- Wash the instruments
- Cultivate plants
- Maintain the freshness of seafood
- Boost the blood circulation
- Skin massage
- Academic research

Advanced oxidation process



Reactions of OH radical:

$$HO\cdot + RH \rightarrow R\cdot + H_2O$$

$$R\cdot + O_2 \rightarrow RO_2\cdot$$

$$RO_2\cdot + RH \rightarrow ROOH + R\cdot$$

$$ROOH + HO\cdot \rightarrow CO_2 + H_2O + \text{Other oxides}$$

RH: organic component

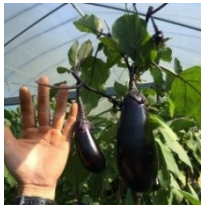
Usage examples / result

Ultra fine bubble generator

① The effect of dissolved oxygen for Cyclamen. –From Nara Agricultural Technique Center
② The eggplants become bigger and brighter. Also, fine bubbles improve the odor of soil. –From Kochi, Mr. Shantou
③ Through the water purification of fine bubble, the production of pearl oyster increases 20%. –From Mie Ken

1

2



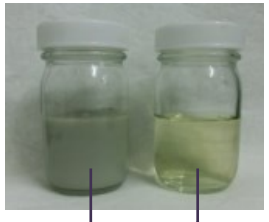
3

Clewa

Examples of waste water treatment

Waste-oil untreated water

Oil-water Separation

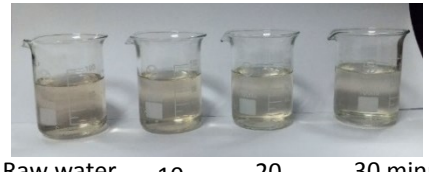


original final

Treated by CLEWA

After precipitation and remove the sedimentation

Textile Waste Water treatment



Raw water 10 20 30 minutes

Treated by CLEWA

HACK International

Environmental Systems & Engineering

Panasonic Environmental Systems & Engineering Co., Ltd.

Our focus is on helping customers to achieve an ideal balance between industrial productivity and eco-friendliness.
Our expertise in environmental protection and energy systems enables us to provide unique solutions for industrial processes relating to "water," "air," “ground," and “energy”.

WATER

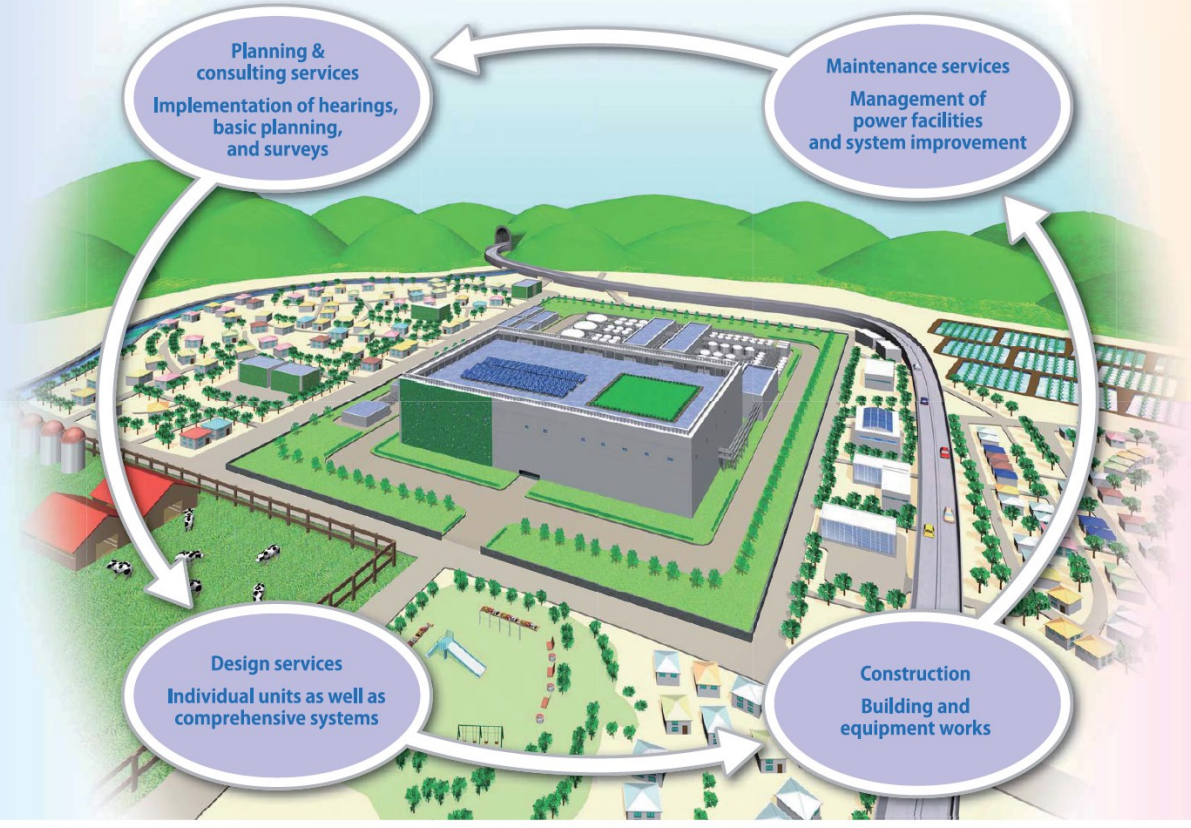
Wastewater treatment & reuse systems

Pure water and liquid chemical supply systems

AIR

Clean rooms / Air conditioning equipment

Exhaust gas treatment/ Dust collection and deodorization systems



GROUND

Soil and groundwater purification

Asbestos management in building demolition

ENERGY

Energy conservation diagnosis and solutions
Urban afforestation

Renewable energy / Photovoltaic power generation

Support services (LCS) that enable the continued operation and expansion of existing manufacturing and agricultural facilities.

Panasonic Environmental Systems & Engineering Co., Ltd.
Overseas Business Unit
3-28-33 Tarumi-cho, Suita City, Osaka 564-0062, Japan

http://panasonic.co.jp/es/peseseng/
E-mail　ホームページからお問い合わせください
TEL:+81-6-6338-1864　FAX:+81-6-6310-7750

Team E-Kansai

Our environmental and energy system solutions provide an advantage in achieving eco-friendly manufacturing with the goal of zero carbon emissions.

WATER

Ultra pure water production systems

Liquid chemical supply systems

AIR

Clean rooms

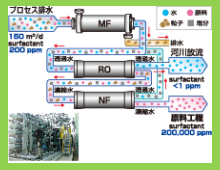
Copressed air systems

ENERGY

Photovoltaic power generation systems

Heat sources/ boilers

WATER



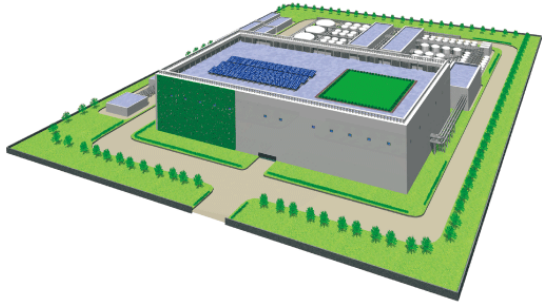
Liquid chemical recycling Material reclamation

AIR

Higf boiling point solvent recovery systems

ENERGY

Heat exchanger Systems (For machine cooling)



WATER

Liqud waste and wastewater treatment systems

Low－emission wastewater treatment systems

Lipolytic agent and equipment

Advanced oxidation process

AIR

Exhaust gas treatment systems

Dust collection systems

EN

Photovoltaic power generation systems

Energy conservation diagnosis services

Soil excavation in remediation process

Simplified pumping and vacuum systems

Amteclean ® automatic Injection systems

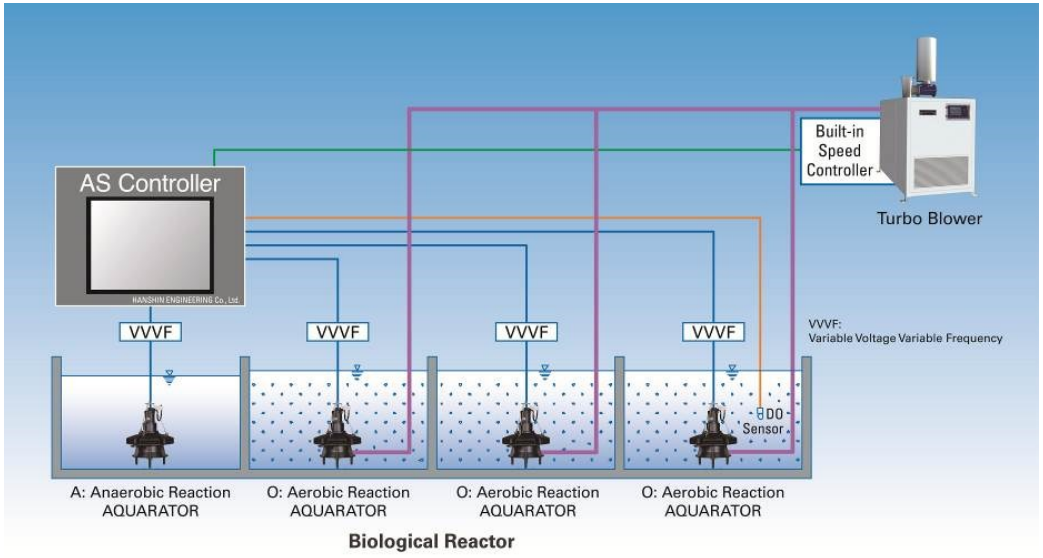
Amteclean ®

Team E-Kansai

Submerged Mechanical Aerator/Agitatior “AQUARATOR”

Hanshin Engineering Co., Ltd.

High effeciency and stable treatment can be atchived and aeratoin-agitation is able to do at the same time



Features

- High oxygen dissolution efficiency and high energy efficiency.
- Slude condition can be mantained good condition and it can not accumlate on a tank bottom so that the treatment is able to be stable.
- Maintenance is not necessary frequently and easy. No need to remove sludge from a tank and clean there during the maintenance.

Overview (Technical principles, actions, etc.)

Aquarator is a submerged mechanical aerator/agitator utilizing in both aerobic tank and anaerobic tank. Miniaturized bubbles are generated and mixed with the liquid effectively to reach all areas of the aeration tank. Energy saving rate is 30% as max by transition from existing aeration equipment and 50% as max in addition to AS controller. (-depending on operation condition)

Hanshin Engineering Co., Ltd. Sales Department

URL: http://www.hanshin-pm.co.jp/

2-26-7 Shikanjima, Konohana-ku, Osaka 554-0014, Japan

Email: info@hanshin-pm.co.jp

TEL: +81-6-6461-6551 FAX: +81-6-6461-6555

Team E-Kansai

Performance /specifications of technology / product

Model	Power (kW)	Voltage (V)	Frequency (Hz)	Water pumping volume (m3/min)	Air flow volume (m3/min)	Oxygen transfer rate (kg-O2/h-unit)	Model	Power (kW)	Voltage (V)	Frequency (Hz)	Water pumping volume (m3/min)	Air flow volume (m3/min)	Oxygen transfer rate (kg-O2/h-unit)
F-15	1.5	200 220 380 400 415 440	50 60	12	1.7	6.5	**F-110**	11.0	200 220 380 400 415 440	50 60	80	12	49
F-22	2.2			14	2.5	9.3	**F-150**	15.0			110	17	67
F-37	3.7			24	4.2	16.1	**F-185**	18.5			140	20	82
F-55	5.5			38	6	24	**F-220**	22.0			160	25	97
F-75	7.5			52	8	33	**F-300**	30.0			220	35	132

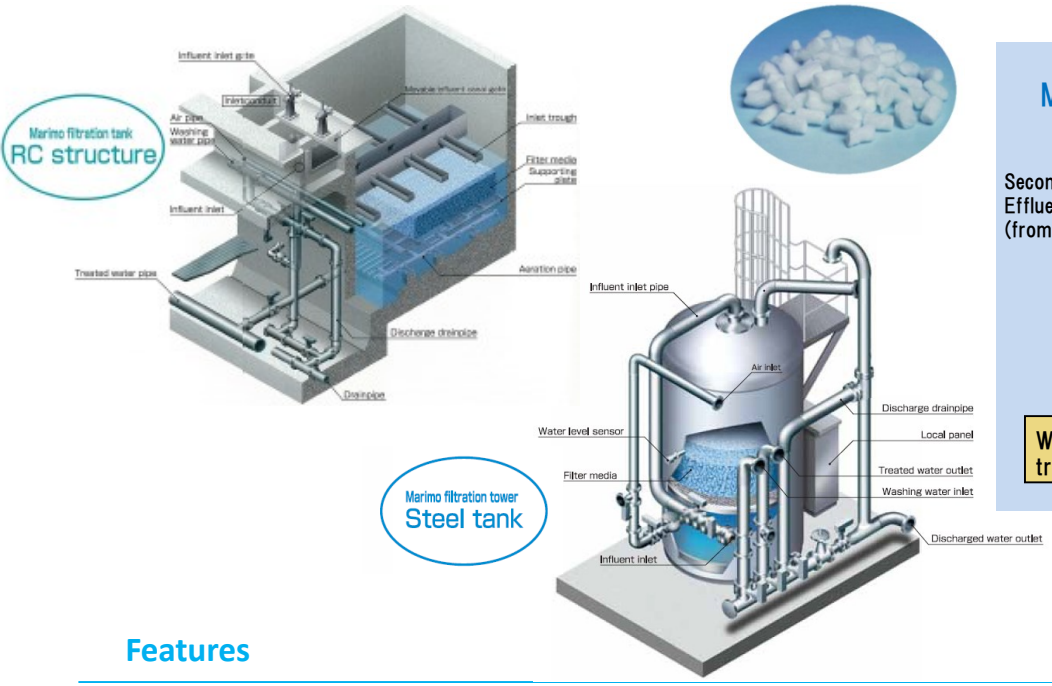
Usage examples / result

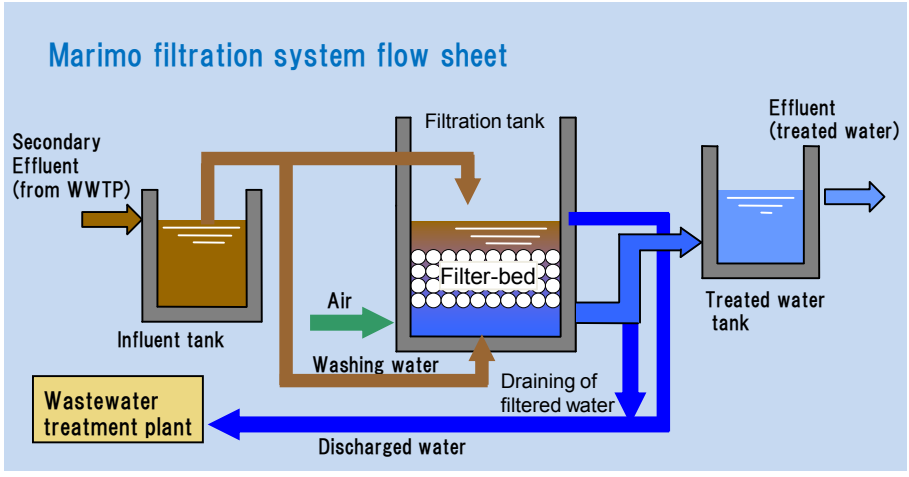
– AQUARATOR installed in wastewater treatment plants in Japan and overseas including Taiwan, China, Korea, Thailand, Malaysia, Indonesia and Philippines is over 10,000 units in 1,000.

Team E-Kansai

High-rate Fiber Filtration System MARIMO -Hitachi Zosen Corporation-

MARIMO achieves High-Rate and High-Performance filtration in advanced sewage treatment.





Features

- The filtration head loss during water treatment is very low.
- The filtration speed can be increased to over 1,000m/day (max. 1,500m/day) while reducing the system's size and footprint (approx. half of the conventional rapid sand filtration).
- This system achieves high-performance filtration through the highly efficient fiber filter media.

Overview (Technical principles, actions, etc.)

This system is the filtration equipment filled with fiber filter media and the filter-bed captures SS by down-flow filtration. The SS-removal rate is approximately equal to that of rapid sand filtration. The high porosity of the filter-bed makes it possible to increase filtration speed while reducing the system's size and footprint. The backwash should be done by air and washing water and the amount of wastewater is less than 2% of that of filtered water per cycle.

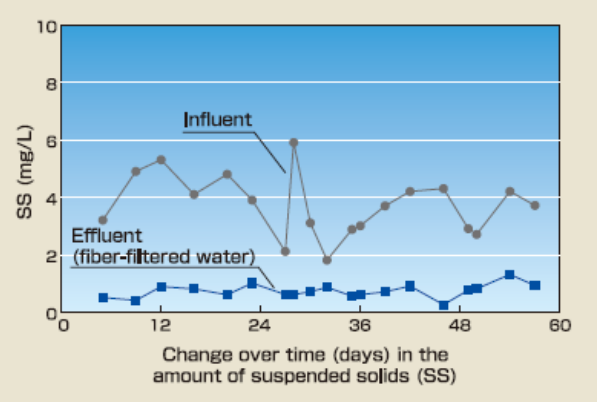
Hitachi Zosen Corporation Environment Business Headquarter
Water Treatment Business Unit Planning & Overseas Promoting Section
7-89, Nanko-kita 1-chome, Suminoe-ku, Osaka 559-8559, JAPAN

URL; http://www.hitachizosen.co.jp
E-mail suieiki@hitachizosen.co.jp
TEL: +81-6-6569-0517 FAX: +81-6-6569-0065

Team E-Kansai

Performance /specifications of technology / product

Items	MARIMO filtration system
Filtration speed	1000m/day
Hydraulic head loss	～1.0mH
Amount of SS captured	6kg-ss/m3-bed
Amount of wastewater	Less than 2% per cycle
SS (remaining in the treated water)	5mg/L or Less
SS removal rate	50～80%
Footprint	1/2 or 2/3 of that of rapid sand filtration
Maintenance cost	Roughly equivalent to that of rapid sand filtration



Usage examples / result

- MARIMO has been operated by many government and private organizations in Japan.
- MARIMO also installed in overseas including China, the Soviet Union, Malaysia, Indonesia and Philippines.

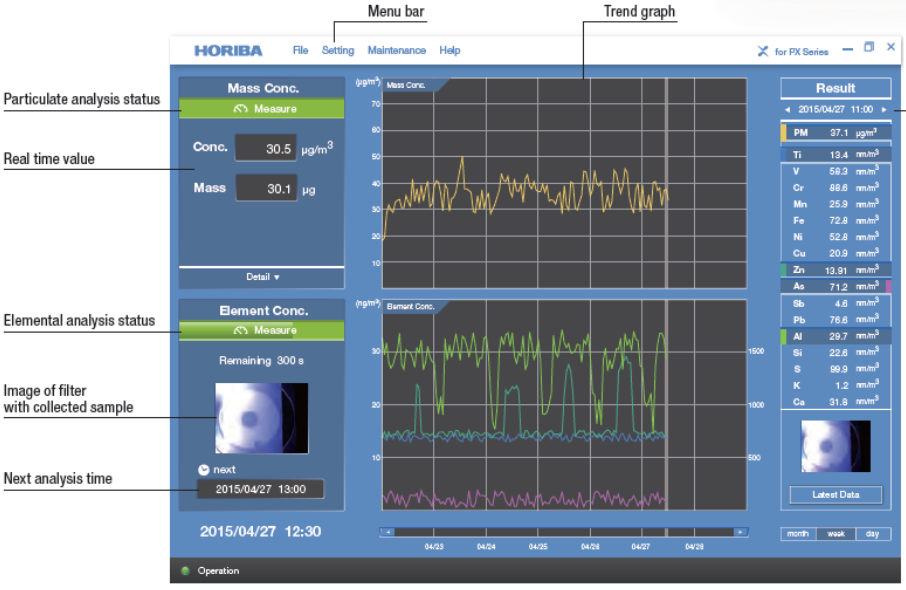
Applications; Advanced sewage treatment, Recycled water (on-site recycled water, water for landscaping, water for recreational use), Water for Industrial use …etc.

Team E-Kansai

PM2.5 Automatic Particle & the Element analyzer 「PX-375」 HORIBA, Ltd.

Continuous analysis of particle and the element with automatic sampling

Screen image (PC, tablet)



Characteristic

- Continuous analysis of PM and the element concentration by single unit directly at field.
- Advanced analysis by world proven technologies and reliable functions.
- Excellent sensitivity and precision realized by HORIBA new-developed filter tape.
- Air pollution source is more specific and accurate because of the installed CMOS camera.

Over view

PX-375 is capable of measuring of PM2.5, PM10 or TSP and the elemental concentration at Air Quality Monitoring Station (AQMS). Compact design enables the analyzer to be installed in laboratory too. The online measurement reduces the man power and the human error in using the manual method. X-ray fluorescence & Beta-ray attenuation are adoption of world proven technologies, and allow highly accurate analysis. PX-375 has safety function (X-ray shield structure and inter lock) for prevention of X-ray leakage. No need to appoint the particular working space and person in charge for the X-ray operation. Chemical background of the filter tape is extremely low. Therefore the filter with collected sample could be used for chemical analysis by other scientific analytical instruments. (ICP-MS etc.) Installed CMOS camera enables observation of collected particulate sample on the filter. In addition to particulate and elemental concentration, analysis of particulate sample image: its color, shape is possible. Particulate concentration, elemental concentration and particulate color - this 3 approach enables more reliable stationary air pollution source appointment.

Horiba Ltd International sales department
2, Miyanohigashi, Kisshoin
Minami-Ku Kyoto 601-8510 Japan

URL;http://www.horiba.co.jp

E-mail: info@horiba.co.jp
TEL: 075-313-8123

Team E-Kansai

Performance and specification of technology and products

Product name	Continuous Particulate Monitor with X-ray Fluorescence
Model	PX-375
Measured object	Particulate matter (PM_{10}, $PM_{2.5}$, TSP)
Measurement content	Particulate concentration and element concentration

Mass analyzer unit

Measurement method	Beta-ray attenuation
PM_{10}	US EPA Louvered PM_{10} Inlet
$PM_{2.5}$	BGI VSCC™ Cyclone
TSP	TSP Inlet
Measurement range	0~200/500/1000μg/m³
Repeatability	±2% (against reference foil value)
Span drift	±3% (24hours)
Lowest detection limit (2σ)	±2μg/m³ (24hours)
Sampling and measurement cycle	0.5/1/2/3/4/6/8/12/24 hours
Radiation source	^{14}C (Carbon-14), less than 10MBq

Element analyzer unit

Measurement method	Energy dispersive X-ray spectroscopy
Detectable elements	See Table 2 "Detectable Elements". Standard parameter is S, Ti, Cr, Mn, Ni, Cu, Zn, Pb, Al, Si, K, Ca, V, Fe, As.
Primary X-ray filter	Automatic switching for light metals/heavy metals
Tube voltage	Automatic switching for 15kV/50kV
Detector	SDD (Silicon Drift Detector)
Sample image	CMOS camera
Lowest detection limit (2σ)	Recommended EPA Method IO 3.3 See Table 1 "Lowest Detection Limit (Example)"
Measurement range	Up to measurement time
Analysis time	1000s (16.6 min) as standard 100 / 200 / 500 / 1000s selectable
Calibration material for X-ray intensity for standard parameter	NIST SRM 2783, other materials (option)
Safety functions for X-ray	Internal lock system
	Key switch
	X-ray indication light

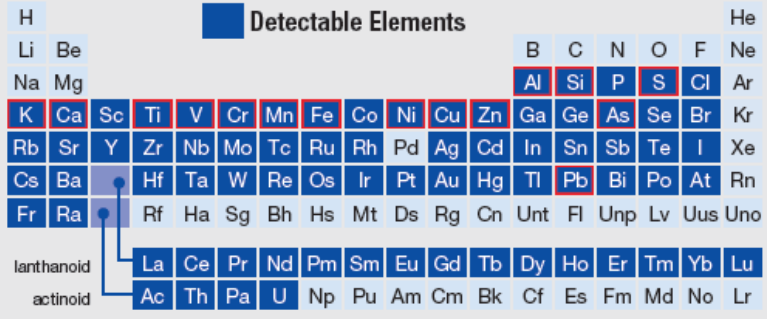
Application examples and results

Lowest Detection Limit (Example) (2σ) (ng/m³) (Table 1)

Element	Analysis time (sec.)				
	100	500	1000	5000	10000
S	14.7	6.6	4.6	2.1	1.5
Ti	11.2	5.0	3.5	1.6	1.1
Cr	1.1	0.5	0.3	0.2	0.1
Mn	4.9	2.2	1.6	0.7	0.5
Cu	19.4	8.7	6.1	2.7	1.9
Zn	14.4	6.4	4.5	2.0	1.4
As	0.1	0.0	0.0	0.0	0.0
Se	1.3	0.6	0.4	0.2	0.1
Ag	4.4	2.0	1.4	0.6	0.4
Cd	23.4	10.4	7.4	3.3	2.3
Sn	15.1	6.8	4.8	2.1	1.5
Hg	3.1	1.4	1.0	0.4	0.3
Pb	5.3	2.4	1.7	0.7	0.5

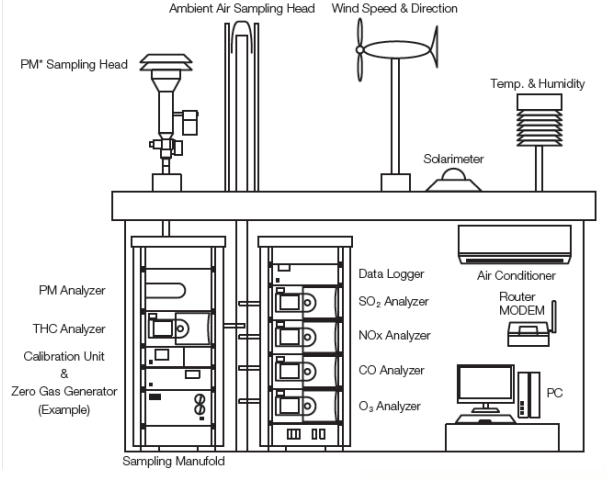
* LDL (σ) is half of the LDL (2σ)

Detectable Elements (Table 2)



* □—Standard parameters , calibrated by standard calibration materials .
* For measurement of element concentration calibration by standard calibration materials is needed.
* Please contact separately about elements , marked as non-detectable.

Air Quality Monitoring Station (AQMS)

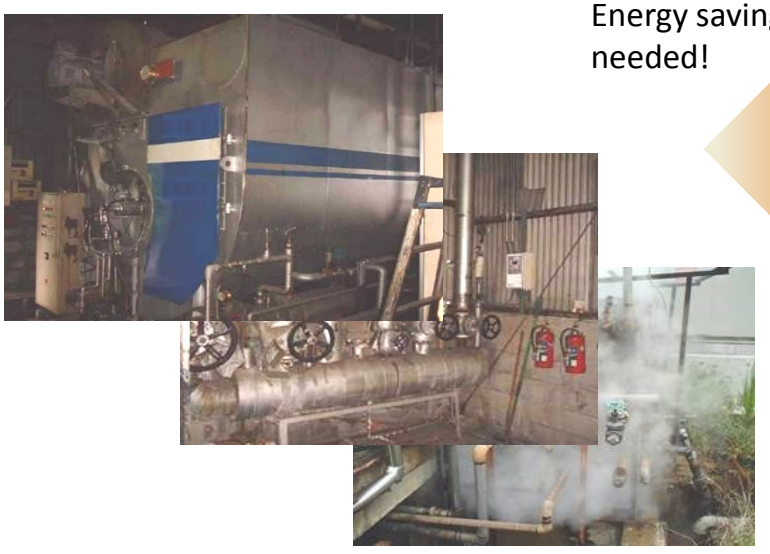


Team E-Kansai

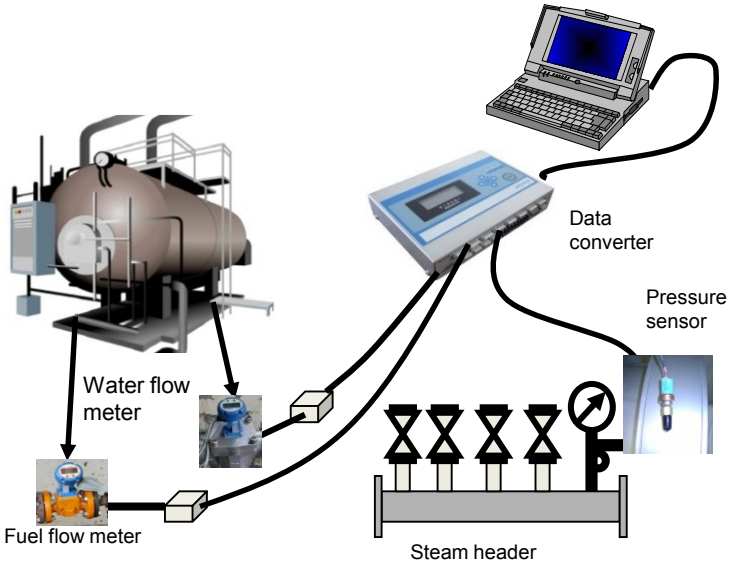
Energy Saving Diagnosis for Boiler Facility

MIURA CO.,LTD.

Visualization is the first step to energy saving and higher efficiency



Energy saving diagnosis is needed!



Features

- Diagrammatizing and analyzing data such as the boiler daily report, etc.
- Measuring the actually-used steam amount, collecting and analyzing detailed data, using unique measuring instruments
- Making improvement suggestions by organizing the trend and issues of the facility from the data

Process outline

- 1st step: Considering improvements by macro-visualizing seasonal fluctuation from the boiler daily report
- 2nd step: Considering optimal boiler facility by micro-visualizing peak loads from the actually-used steam amount
- Simulations and suggestions on efficiency improvements and operation conditions regarding replacement with highly-efficient once-through boilers

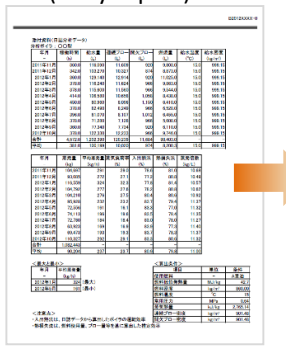
MIURA Co., Ltd.
International Promotion Department
7 Horie, Matsuyama, Ehime, 799-2696, Japan

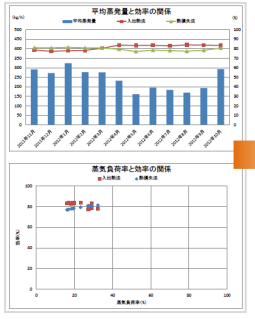
URL: http://www.miuraz.co.jp
E-mail kaigai_chukei@miuraz.co.jp
TEL: +81-89-979-7123 FAX: +81-89-979-7117

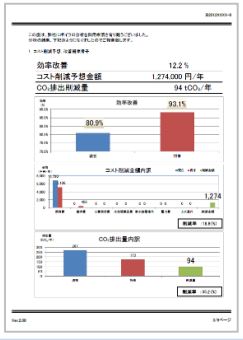
Team E-Kansai

Example of Diagnosis Data

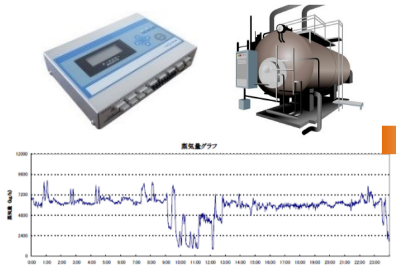
(Daily report) (Visualization) (Improvement suggestion)

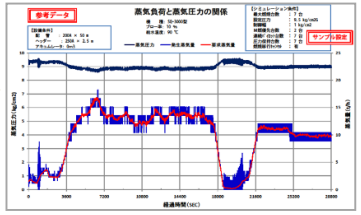






(Load analysis) (Simulation)



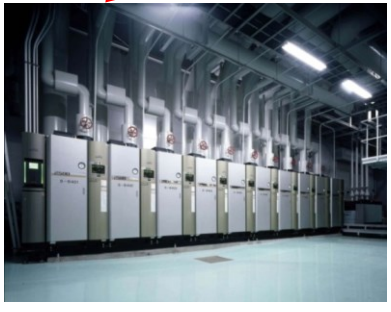


Diagnosis Cases

- We have analyzed more than 30,000 cases, as many as 60,000 boilers in Japan.
- The same kind of analysis and great energy saving using the once-through boiler system can be performed even abroad.

Conventional flue and smoke tube boiler

Anticipated energy saving effect:
10 to 20% or more



Once-through boilers of multiple installation

(Example of improvement)

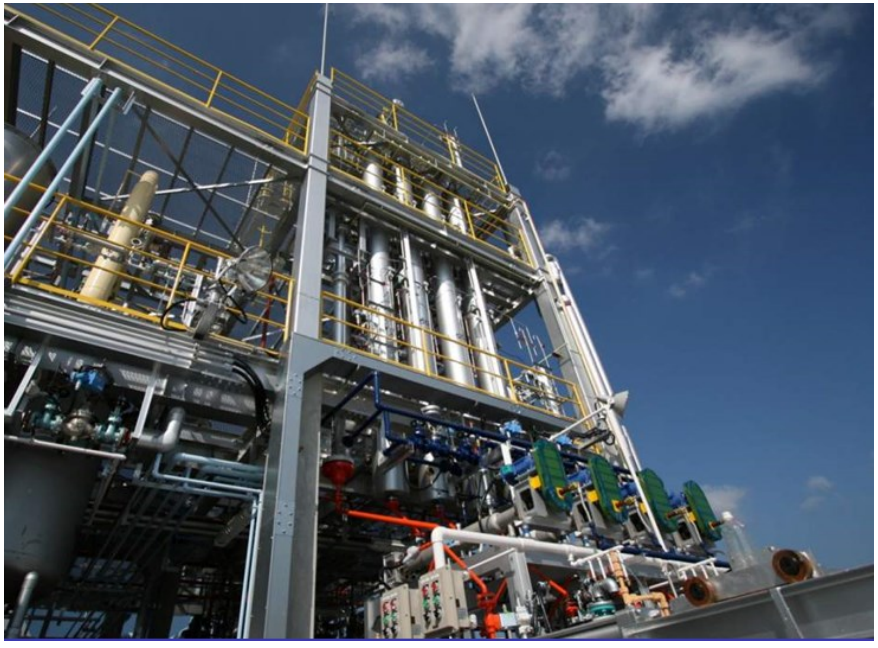
	BEFORE	AFTER	
EQUIPMENT			
BOILER TYPE	Water tube boiler	Small once-through boiler	
BOILER CAPACITY	3.6 ton/h	2 ton/h	
NUMBER OF BOILER	2	3	
FUEL	Natural gas	Natural gas	
EFFICIENCY	79.6 %	96.9 %	22% UP
CO_2 emissions	1,014 ton/ year	871 ton/ year	14% DOWN

Team E-Kansai

Total Coordination of Resources Recycling

REMATEC Holdings Corporation

Showing the REMATEC Group's Innovation to the world!



Features

- REMATEC provides a system that changes waste, which is currently incinerated or landfilled, into resources and/or energy.
- REMATEC provides consistent services, from business planning to plant design, construction, and operation.
- REMATEC provides technologies and know-how built up by its waste recycling business in Japan.

Overview

With the slogan "Innovation for the Earth," REMATEC provides combinations of services including consulting throughout the environmental field, as well as businesses providing plant design, construction, technology development, site management and operational outsourcing, through its experiences built up in the reclaiming fuel manufacturing business for industrial waste and the business of restoring illegal waste-dumping sites in Japan to their original state.

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Usage examples/result

REMATEC delivers proposals for and has a track record in systems for recycling illegally disposed waste and disaster debris into fuel as well as doing technology transfers related to fuel conversion recycling plants.

2002: Restoring an illegal waste-dumping site in Iwate/Aomori to its original state

We formulated a basic plan for restoring one of Japan's largest illegal waste-dumping sites and took care of the management of the actual site.

2008: Building of facilities in a cement plant

We designed and built waste oil/biomass mixed fuel fabrication facilities in a cement plant.

1997: Recovering heavy oil from the Nakhodka oil spill accident

We took care of the recovery and processing of heavy oil spilled at the tanker disaster at sea.

1996: Korea (Ulsan)

We transferred our waste recycling technology to a petrochemical industrial complex and supported its operation.

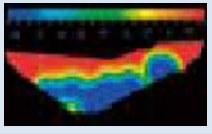
2011: Processing disaster debris from the Great East Japan Earthquake

We were comprehensively in charge of work, including the formulation of a plan, for processing disaster debris from the tsunami as well as designing and operating preprocessing (salt removal) facilities for fragmentation/sorting equipment and cement raw fuel manufacturing.

2012: Thailand

We built a waste recycling plant, transferred our technology to it, and supported its operation.

2010: Underground fire extinguishing operation at an illegal waste-dumping site

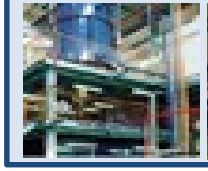


We proposed a fire extinguishing method using fluid analyses and carried out firefighting of underground fires caused by gas generated from buried waste.

1993: Taiwan (Kaohsiung)

We exported a full-turnkey system to a cement plant.

We built a waste recycling plant.



Team E-Kansai

☆For more information about Team E-Kansai

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