

別冊

民間企業の技術紹介資料一覧

民間企業の技術紹介資料一覧

No.	会社名	ドキュメント名（英語）	内容	頁番号
1	株式会社 NJS	Cloud Service SkyScra per_Fcen	プラントアセットマネジメン トのシステムの紹介	2,3
2-1	大成機工株式会社	STOPPER PANEL	不断水工法のための管路断水 器の紹介	4
2-2		TAI-FLEX	耐震継手（ダクティル鋳鉄製 ボール型伸縮可とう管）の紹 介	5
3	株式会社トーケミ	FILTER MEDIA	ベトナムの工場での水道用ろ 材アンスラサイト等の水処理 関連製品の紹介	6,7
4	東芝インフラシステ ムズ株式会社	Toshiba's ozone genera tor TGOGS	オゾン発生装置の紹介	8,9
5	日本原料株式会社	SIPHON TANK Filtratio n Device Features Inte rnationally Patented SI PHON WASHING SYST EM	ろ過材洗浄システムを備え た、ろ過材交換工事不要のろ 過装置の紹介	10,11
6	フジテコム株式会社	Water Leak Detection Devices FUJI TECOM.INC	漏水検出関連機器の紹介 会社紹介	12,13

※五十音順

1 株式会社 NJS

Cloud Service SkyScraper_Fcen

INFORMATION



Plant Asset Management



<http://www.njs.co.jp>

Sky ScraperFC (Facility Information System) supports strengthening of Water Supply and Sewerage system operation by integrating variety of information (Construction Management, Facility Management, Maintenance Repair, Failure Report, Inspection Management, Operation Management, Cost and etc.) for Water Treatment Plant, Sewage Treatment Plant and Pumping Station throughout the entire period from those construction phase up to Operation & Maintenance.

1 Integrated Information Management

- Integration and Utilizing of Facility Information
- Compiling and Utilizing of O&M practice
- Drawing/Document control

3 Support to Implement the Efficient Operation

- Standardization and Streamlining of Inspection/Survey
- Streamlining of reporting
- Utilizing Mobile Terminal



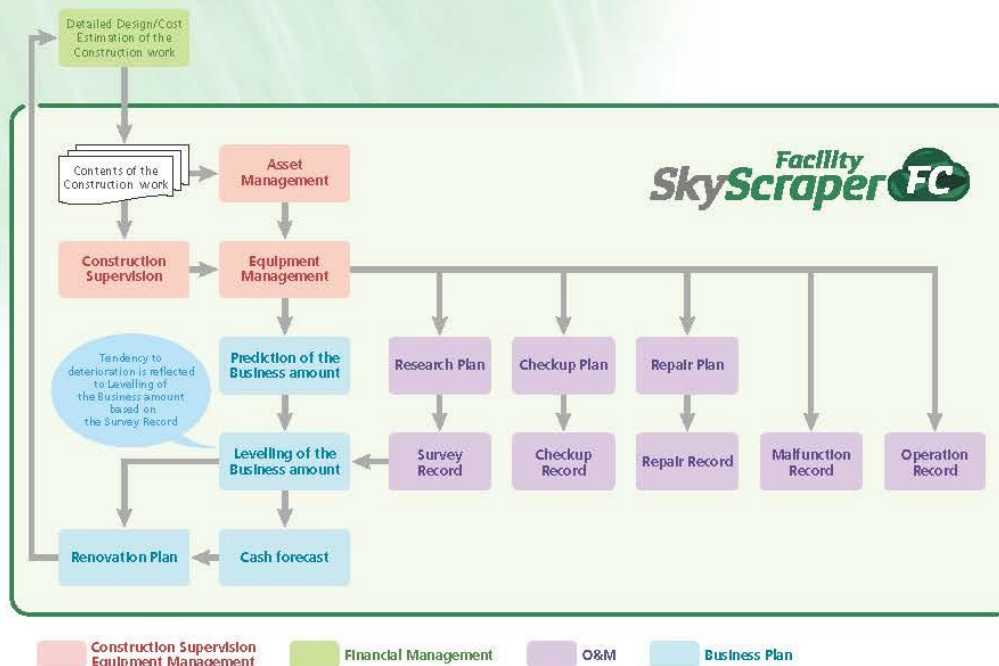
2 Upgrade the Quality of O&M

- Inspection/Survey Record
- Inspection/Survey Planning and Management
- Promotion of Maintenance Engineering

4 Support to Organize the Better Plan

- Construction Plan and Operating Status Management
- Reconstruction/Renewal Planning
- Monitoring O&M Cost
- Proper Fixed Asset Management

Example of Asset Management Flow



Facility operation

- Plant Asset Management -

Integrated Information Management information

When you need information

Easy to access the standardized data of facilities and assets, and O&M, drawing and specification, then Easy to manage the integrated operation efficiently



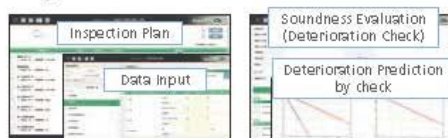
Ledger management

Drawing Management

Upgrade the Quality of O&M

Maintain the better operation and risk management

Management of the systematic and time series O&M information Easy to realize better assets management. Finally assurance of the quality and long life of the assets.



Information Management of Site Inspection

Deterioration Prediction by Survey

Support to Implement the Efficient Operation

Improvement of the Operation Efficiency

Easy to access the data from the general plan. Improvement of site inspection with mobile tablet. With site information the renewal of the system for the daily operation.



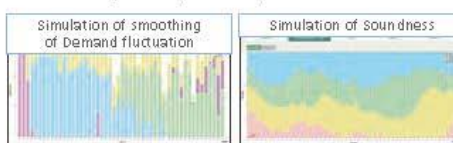
Linkage with Layout Plan

Linkage with Tablet

Support to Organize the Better Plan

Check of Reliability, Safety and Cost

With the effective utilization of the information of O&M and renovation the minimize the cost of renovation, and maximize the value of the assets, then better integrated operation plan



Demand Forecast and Smoothing

Simulation of Soundness

List of Functions of System

Basic features	O&M Management	Upgrade of O&M	Support to long term planning	Common Features
- Management of Construction Work - Management of Facility - Management of Drawing and Specification - Management of Fixed Assets - Search of Inventories - Search of layout plan	- Management of Maintenance Repair - Management of Malfunction - Management of Daily Report - Management of Utility - Stock management	- Management of Site Inspection - Check of Current Assets(- Soundness Evaluation) - Management of Operation - Inspection Check Sheet for Tablet	- Construction Plan - Regular Maintenance Repair - Plan of Survey - Plan of Site Inspection - Business Plan - Future Demand Forecast	- Login Function - Authorization Setting - Master Maintenance - Form Output - Data Backup

Red color is optional function

YANO STOPPER

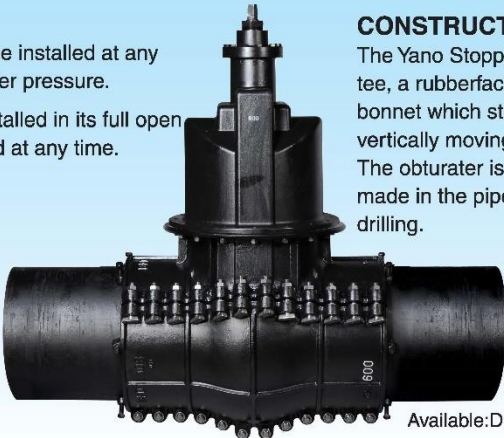
WATER PIPELINE STOPPER

Installed under pressure

FEATURES

The Yano Stopper can be installed at any part on the pipeline under pressure.

The Yano Stopper is installed in its full open state, and can be closed at any time.



CONSTRUCTION

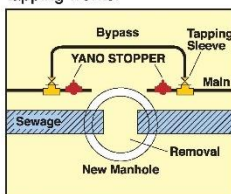
The Yano Stopper consists of a split tee, a rubberfaced obturator and a bonnet which stores a spindle for vertically moving the obturator. The obturator is inserted into a cut hole made in the pipe by under pressure drilling.

Available: DN75-600mm

EXAMPLES OF PRACTICAL APPLICATION

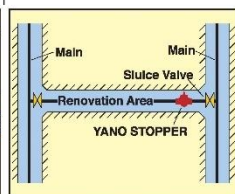
Installation for removal of the main

To remove the existing main in connection with sewage construction, together with tapping works.



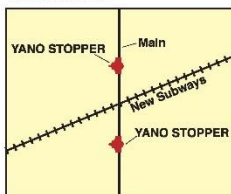
Installation into the pipe renovation area

When the sluice valves are out of order or if there is no valve.



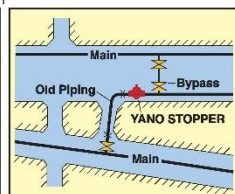
Installation for precautionary measure

As an urgent valve, in connection with underground construction.



Installation for removal of old piping

To remove the existing old piping, after bypass piping.



KEEP THE LIFE LINE.
LINK THE NEXT

TAISEI KIKO CO., LTD.
www.taiseikiko.com



TAI-FLEX

Ductile Cast Iron Ball-type Flexible Joint TF-80 series

Protects important "Life line" and applied widely
for every possible position.



TAI-FLEX(TF-80)

TAI-FLEX is a ductile iron flexible expansion joint which was developed for the purpose of protecting pipeline from pulling out of jointed parts and/or damage which are caused by ground subsidence in reclaimed land and soft ground.

Single Type DN75-600mm
Double Type DN50-1800mm



Inspecting water tightness of the world largest TAI-FLEX DN 1800mm of subsiding

- *Examine earthquake-proof with the world largest liquefaction testing machine.
- *Achieved retaining force more than 3DkN for all size.
- *Non bolt and nut, light weighted, compact.
- *Sufficient bending angle and subsidence.
- *Rubber sealing with excellent water tightness.
- *Correspond simultaneously to elasticity, bending, torsion.

 **TAISEI KIKO CO.,LTD.**





TOHKEMY

Filter media

Anthracite from Vietnam Factory

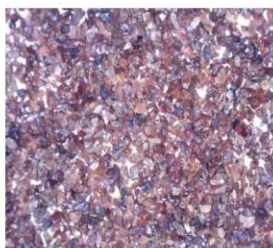


For SS removal

Filter Sand



Garnet



For iron and manganese removal

Ferrolite



Manganese Sand



Fiber and Membrane Filter Media

Actifiber



SMF cassette type



SMF naked type



SMF vessel type



TOHKEMY CORPORATION

Address: 1-12-11, Tagawakita, Yodogawa-ku, Osaka 532-0021, JAPAN

Phone : +81-6-6301-6460, Fax : +81-6-6308-3022

E-mail : web-master@TOHKEMY.co.jp

TOHKEMY Water Quality Remote Control System

TOHKEMY water quality remote control system will help to solve the following problems:

- An [excessive injection] or a [insufficient injection] due to changes in raw water quality.
- Occupying human power.
- Human error during measurement.
- etc.



Controlled objects

Features

AUTOMATIC

Concentration will be controlled automatically after setting a target value.

24H

24 hours continuous measurement.

RELIABLE

Less human error during measurement.

ALARM

Alarm by an e-mail when a anomaly occurs.

RECORDING

Continuously record the concentration, also calibration and alarm information.

REMOTE

Remote monitoring and target value setting is available by a tablet, PC, or smartphone.



Applications

This system can be applied to water quality control in the following situation.

- Water works
- Industrial water
- Domestic water



TOHKEMY CORPORATION

<https://www.tohkemy.co.jp/english/>

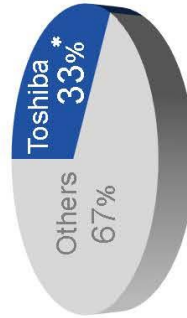
Toshiba's ozone generator TGOGS™



Overview

Toshiba first launched an ozone generator in 1976, and we have about 40 years' experience with water treatment systems. Based on this long-term experience, we have accumulated extensive knowhow regarding large-scale ozone generators. We have contributed to improving the drinking water quality in major metropolitan areas (e.g. Tokyo, Osaka, Fukuoka).

Toshiba has the largest market share in the drinking water treatment field in Japan.



Market Share



Drinking Water Treatment
(31.0 kg-O₃/h x 4 sets)



Waste Water Treatment
(2.0 kg-O₃/h)



Industrial Plant Treatment
(1.0 kg-O₃/h)

*Based on period from 2000 to 2020, and daily designed water flow of more than 50,000m³/d.
The above figure includes projects under construction.

Features of Toshiba's Ozone Generator



High Reliability

Long life electrode realized by stainless steel film
(Breakdown rate less than 3% in 10 years)

High Flexibility and Efficiency

Wide range of capacity and ozone concentrations

Oxygen Fed

Ozone production : ~120kg O₃/h
Concentrations : ~10wt% (Maximum 16wt%)
Specific energy : 7~8 kWh/kg O₃

*With cooling water inlet temperature of 15°C

Air Fed

Ozone production : ~50kg O₃/h
Concentrations : ~3wt% (Maximum 4.5wt%)
Specific energy : 14 kWh/kg O₃

*With cooling water inlet temperature of 15°C

SIPHON TANK Filtration Device Features Internationally Patented SIPHON WASHING SYSTEM

SIPHON TANK Filtration Device Features Internationally Patented SIPHON WASHING SYSTEM

■ The basic filtration method Sand Filtration

Rains on the earth penetrate the stratum. Impurities are trapped by sand and soil, then the water is gradually purified since ancient times.

Primitive filtration method that has been practised since ancient times.

Safe and lasting water production method. Over 80% of water treatment plants adopt sand filtration.

■ All filtration processes require filter replacement

The suspended solid trapped by the filter bed is retained in the bed, and when the amount of trapped matter reaches the limit, "backwashing" is performed, in which clean water is returned from the bottom to backwash. However, with water flow cleaning power, suspended solid remains in the bed, and the filter material becomes gradually soiled, and the filter material must be replaced.

◆ Water Filtration Device without filter media replacement

The "SIPHON TANK" with built-in patented "SIPHON WASHING" function, which has been developed through years of technology accumulation, maintains the filter media in the state of new sand, eliminating the need for filter media replacement for the first time in the world. Reduce backwash water volume and reduce power consumption. **We realized maintenance cost reduction and consideration to the environment.**

◆ SIPHON Washing Principle

Longitudinal vortices due to the reaction of filter media and gravity.

Three-dimensional vortices overlapping initially, longitudinal and transverse vortices.

◆ New age filtration device with built-in SIPHON WASHING

The SIPHON TANK does not require filter replacement. The filter media is always kept clean by using SIPHON WASHING together with backwashing every time. **Reduce backwash water volume.** Because the filter media is kept clean, the amount of suspended solid is reduced, and the need for filter media replacement and water quality maintenance can be significantly reduced, and CO₂ emissions can also be reduced.

BENEFIT of SIPHON TANK

SIPHON TANK BENEFIT 1

◆ Reduce backwashing volume

The amount of suspended solid in the SIPHON TANK is **up to 3.6 times** that of conventional rapid filtration. In addition, since the SIPHON WASHING is used together, the backwashing time per SIPHON TANK is **only 7 minutes**. The backwash flow rate per unit area is reduced **by up to 93%** compared to conventional rapid filtration.

Unit	SIPHON TANK	Conventional Rapid Sand Filter
Backwash frequency	Times/day	1
Backwash time	minutes	30
Backwash ratio	m ³ /day	4.2
Backwash amount	m ³ /day	500
Ratio	%	6.9

※ Verification in the case of ST-3000. No water supply. 50℃/10℃/10℃.

※ The frequency of backwashing depends on the experimental results of air R & D.

◆ Reduce backwash wastewater facility cost and sewer cost

The reduced backwash volume enables **downsizing** of wastewater facilities and reduces operating costs. It also leads to a reduction in sewage rates.

◆ Realize direct filtration without pretreatment

The Interceptor and Zebra layer enable direct filtration without the need for pre-treatment flocculation, even with high turbidity raw water. It may **reduce construction cost** of pre-treatment.

◆ SIPHON TANK BENEFIT 1

◆ The SIPHON TANK uses the **high performance filter media "Interceptor"** developed by NIHON GENRYO as a standard specification.

Long filtration duration and low backwash frequency

Treatment with high turbidity raw water

The filter (filter material) of the SIPHON TANK uses high performance filter material "Interceptor" developed by NIHON GENRYO. It is a high-quality, high-performance filter media that exceeds the filtration sand standard used in water treatment plants. It functions as a filtration zone up to about 80% of the filtration layer, and compared to the filtration sand used at each water purification plant in Japan (up to about 60% of the filtration layer), functions as a filtration zone, turbidity per unit area, the amount of quality trapped is more than doubled, the duration of filtration is extended, and the frequency of backwashing is reduced.

Interceptor
0.3mm ~ 3.0mm

Zebra Layer
0.3mm ~ 3.0mm

Conventional DMF
0.3mm ~ 3.0mm

Suspended solid are spread and removal in deeper suspended solid capture zone of Zebra Layer.

Up to 2.0 times

Up to 3.6 times

※ According to our R&D data.

◆ Zebra Layer

Up to 2.0 times

Up to 3.6 times

※ According to our R&D data.

- 11 -

◆ Maintenance costs can be significantly reduced

- No need to replace the filter media and the stainless steel main body significantly reduced the maintenance cost of the main body
30 years maintenance cost

[illegible]

Greenhouse gas emissions during backwashing

- We will reduce CO₂ emissions from water and sewage to reduce water and sewage usage. It also reduces the operating time of the backwash pump, which consumes the most electricity in the water treatment system, and reduces the CO₂ emissions from electricity. SIPON TANK is an environmentally friendly filtration device.
- CO₂ emissions per day are reduced by 63.1kg/49.6kg = 33.5kg. Annual reduction of 10,060 kg 10-t-CO₂.**

We will reduce CO2 emissions from water and sewage to reduce water's carbon footprint. We will use the backwash pump, which consumes the most electricity in the water treatment plant, to power the Siphon Tank. Siphon Tank is an environmentally friendly filtration device that uses gravity to filter water. It is a low-cost, low-maintenance, and low-energy device that can be used in a variety of applications. It is a great way to reduce the carbon footprint of your water treatment plant.



By increasing the amount of suspended solid collected and reducing the frequency of backwashing, the amount of electricity and chemicals used per unit water can be reduced by up to 40% and 34%.

SIPHON TANK BENEFIT 5

- Excellent economic efficiency for installation and maintenance**

It is assumed that the throughput per day is 30m³. Assuming 12 years of operation from the introduction, we compared filter media (or membrane filter), electricity, backwashing, chemicals, labor costs, etc. in the case of membrane filtration, slow filtration,



Nihon Genyoo Co., Ltd. is a specialized manufacturer of filter media, founded in 1939. 80% of water purification plants in Japan use our filter materials today, we are actively implementing filter media recycling at water purification plants in order to leave raw filter materials for our next generation.

Water Leak Detection Devices FUJI TECOM INC.

Corporate History

~Over 60 Years Contribution to Water Industry~

- 1958 Founded as FUJI SANGYO INC.
- 1969 Established subsidiary publisher, "ROSUI BOSHI SHIRYOSHA Co., Ltd.", the 1st technical journal
- 1971 Established Technical Development & Training Center at Niiza, Saitama
- 1972 Established subsidiary survey contractor and consultant, FUJI ROSUI CHOSA Co., Ltd
- 1979 Founded First Survey Company in Japan (currently as FUJI SUBSURFACE INFORMATION, LTD.)
- 1985 Renamed as FUJI TECOM INC.
- 1994 Launched Marker Locating System
- 1999 Obtained ISO9001 certificate
- 2005 Launched Digital Leak Detector FSB-8D
- 2005 Completion of Technology and Development Center and renewal of Training Course
- 2007 Launched Digital Noise Reduction Water Leak Detector DNR-18
- 2012 Launched Leak Noise Logging System LNL-1
- 2018 Launched Pipeline & Cable Locator PL-G
- 2020 Launched Digital Leak Noise Correlator LC-5000
- 2021 Launched Water Leak Detector DNR-18

Contact

Mail: overseas_sales@fujitecom.co.jp

Web: <https://www.fujitecom.com/>



Domestic Offices and Service Network

- Headquarter & Overseas Sales Group:
Chiyoda-ku, Tokyo
- Technical Development & Training Center:
Niiza, Saitama
- 8 Regional Sales Offices



Worldwide Sales and Service Network

More than 40 distributors all over the world



Water Leak Detection Devices FUJITECOM INC.

Contact

Mail: overseas_sales@fujitecom.co.jp

Web: <https://www.fujitecom.com/>



Digital Quatro Correlator LC-5000

- World's first!! simultaneous correlation of up to 6 routes can be performed by 4 pre-amplifiers.
- By logger function, possible to check water leaks after collecting the equipment at a later date.
- 4 sensor correlation can approach a leak point in more than 2 ways and detection accuracy is improved and more stable



Water Leak Detector LDR-20

- A leak detector with significantly improved sensitivity
- The small and light design reduce the work load for a long time.
- By adopting universal design, pick-up sensor can be connected to either left or right.
- Data display and report output available with an attached application.



Pipeline & Cable Locator PL-G

- The receiver detects the magnetic field generated in the pipe and identifies the position and depth of the pipe.
- The buzzer, vibrator, and LED will inform you the position of the pipe.



Digital Sound Detector: FSB-8D Noise Level Analyzer: FSJ-1

- An electronic listening stick that captures a weak leak sound and discovers the leak by comparing the sound with the numerical value.
- By installing a analyzing unit, automatic judgment and recording of judgment results are possible.

