

SMART&COMPACT WATER TREATMENT SYSTEM MARINE WATER TREATMENT SYSTEM

DIFFERENCES IN TECHNOLOGY, DIFFERENCES IN WATER QUALITY.



| BUSINESS AREA |

YB Engineering provides water treatment engineering service to various domestic and overseas companies.

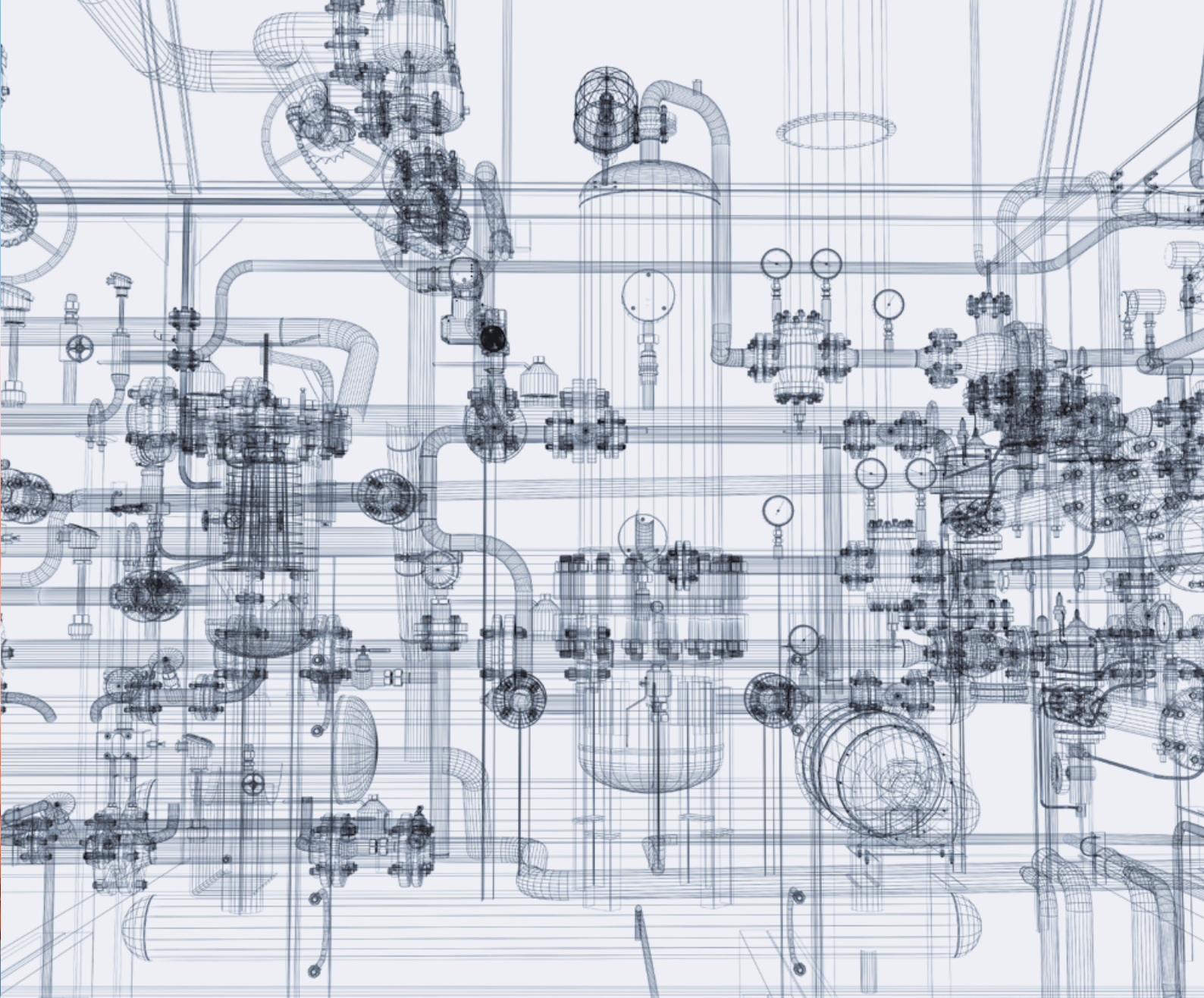
All facilities are provided to the customers based on accumulated technology skill such as water treatment and water purification system, dissolved air flotation system, chemical injection system, water analisys system, etc. on the basis of smart control system.



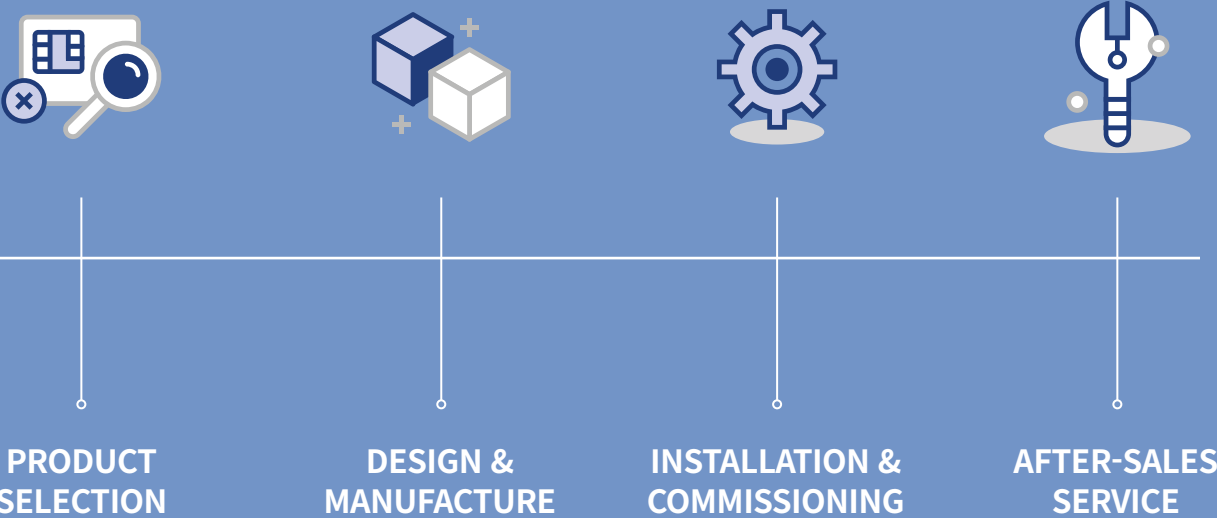
| HISTORY |



- 2021**
 - + Awarded Minister Prize of the Ministry of SMEs and Startups in 2021
 - + Acquired ISO14001 Environmental Management System
 - + Registered for Water Supply and Sewerage Equipment Works
 - + Developed Smart Re-chlorination System
- 2019**
 - + Designated as partner company of the Korea Institute of Industrial Technology
 - + Registered affiliated R&D center
 - + Developed Water Treatment Disinfection NaCl Injection System
 - + Moved headquarter and factory to a larger facility in the International Logistics Industrial City at Mieum-dong, Gangseo-gu, Busan
- 2018**
 - + Developed powder chemical treatment tank system
 - + Registered as cooperative company of Techcross
- 2017**
 - + Developed Perfect Discharging type Chemical Dosing System
 - + Acquired ISO9001 Quality Management System
- 2015**
 - + Developed High Concentration Brine Production System
 - + Registered as Innovative Venture Company
 - + Acquired family-friendly certificate by the Ministry of Gender Equality and Family
- 2014**
 - + Confirmed direct manufacturing verification by the Small and Medium Business Administration (Dosing system and 18 other systems)
 - + Registered for Mechanical Works
 - + Registered as cooperative company of Samsung Heavy Industries (S&SYS)
- 2013**
 - + Registered Yangsan factory of YB Engineering Co., Ltd.
 - + Registered as cooperative company of Lotte Fine Chemical (Former Samsung Fine Chemical)
- 2009**
 - + Established YB Engineering Co., Ltd.



INNOVATIVE THINKING MAKES A DIFFERENCE IN TECHNOLOGY.





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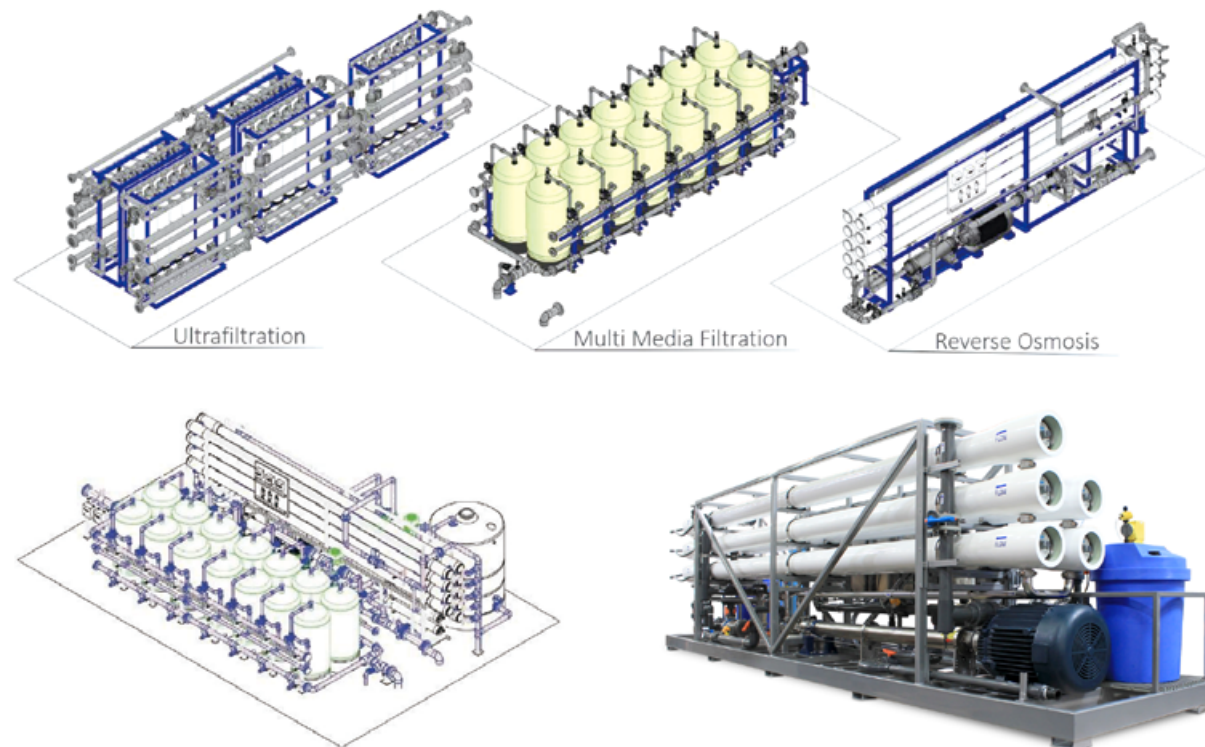
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SMART&COMPACT WATER TREATMENT SYSTEM



1. WATER PURIFICATION & DEMI. WATER PACKAGE



CONCISE STRUCTURE / COMPACT / AUTOMATION SYSTEM / CUSTOMIZED PRODUCTION

- + Increase portability and convenience in site installation by blocking the facilities for each necessary stage according to customer's demand
- + Possible to systematize by the combination of each block according to necessary water quality by blocking selecting necessary facilities composition
- + Minimize necessary installation space with optimized components
- + Easy to operate and maintenance by constructing automation system
- + Possible to check real-time facility status by constructing mobile interlocking system
- + Application : The facility require hyper pure water such as water purification plant, chemical plant, power plant, etc.
- + Standard capacity : 100m3/day ~ 1200m3/day

Models	Capacity	Consists
Y-BLOCK-MMF	App. ~ 1200m3/day	Pressure Vessel / Piping Skid / Air Supplier
Y-BLOCK-UF	App. ~ 1200m3/day	Auto Filter / UF / Air Supplier / Backwash / CIP
Y-BLOCK-RO	App. ~ 600m3/day	MF / H.P / ERD / Chemical Dosing

* Above specification is an example only and it is possible to change according to the component and material

2. MOBILE WATER TREATMENT PACKAGE



MOVABLE STRUCTURE / COMPACT / AUTOMATION SYSTEM

- + Portable container structure possible to install at islands and mountains and the location difficult to construct large scale facility easily
- + Specialized in easiness on moving and installation on the basis of container
- + Possible to change the composition of container as occasion demand and easy to operate and maintenance by constructing unmanned automation
- + Possible to provide standardized capacity and supply guaranteed produced water
- + Possible to increase the capacity per package unit
- + Possible to check real-time facility status by constructing mobile interlocking system
- + Application : Island and mountains water supply facility, hotel and resort water supply, emergency disaster water supply, small scale power plant water
- + Standard capacity : 500m3/day ~ 1500m3/day

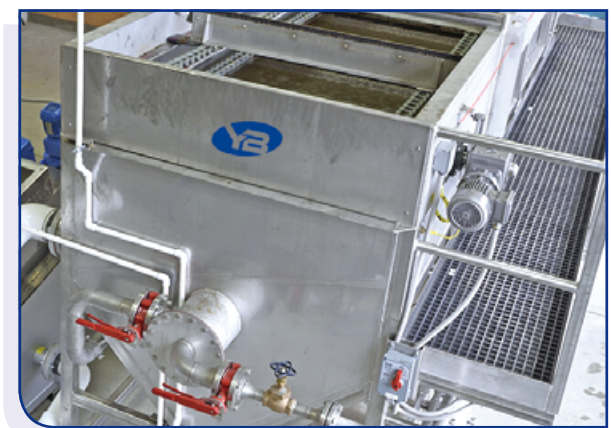
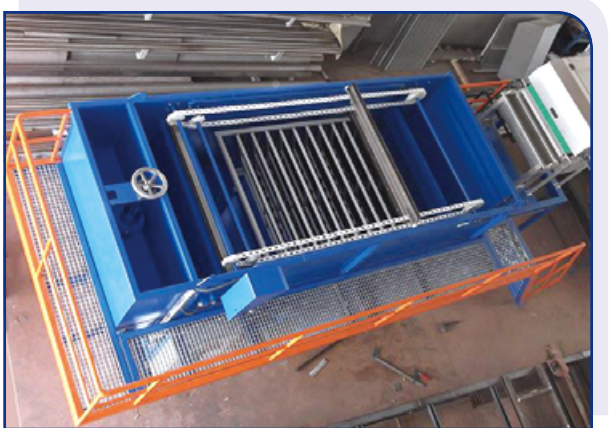
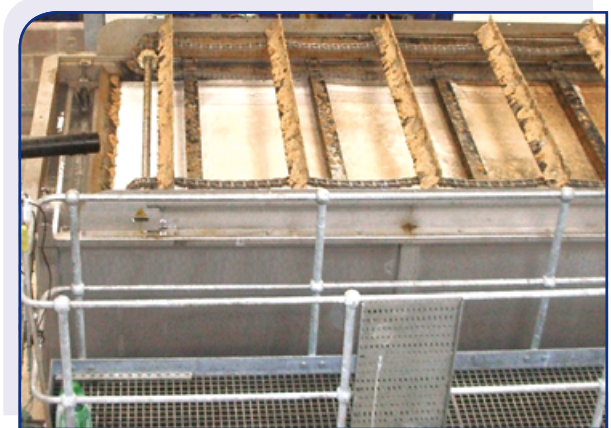
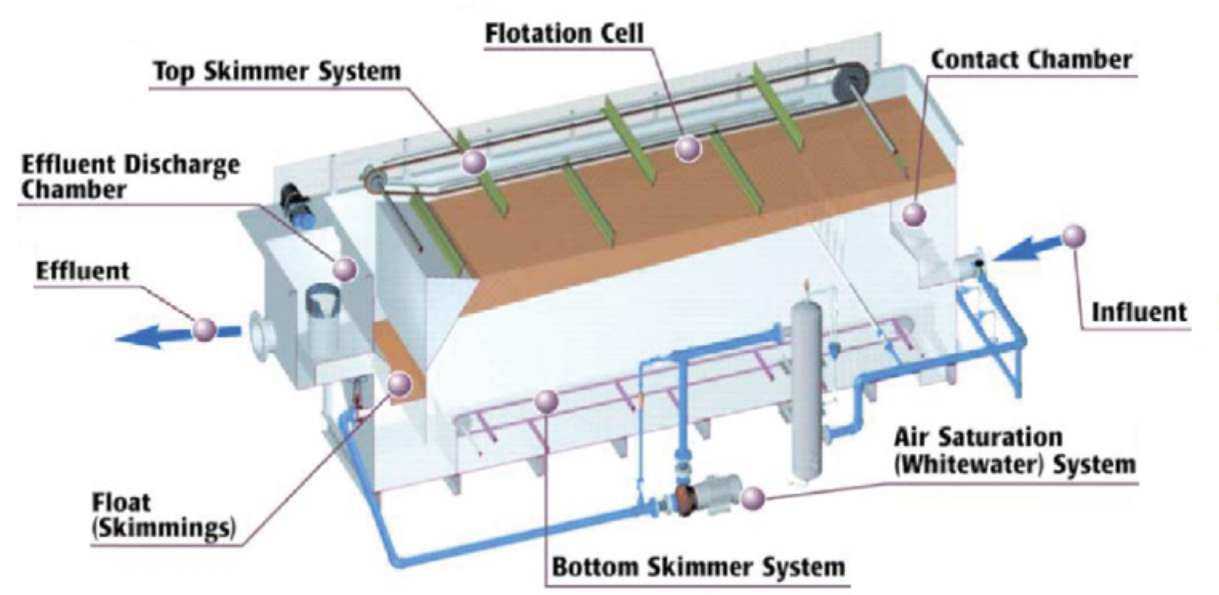
Models	Capacity	Dimensions	Consists
Y-CUBE-SD20	App. ~ 500m3/day	20' Container	Coagulation / Flocculation / Clarification / Filtration / Disinfection
Y-CUBE-SD40	App. ~ 1000m3/day	40' Container	
Y-CUBE-BW45	App. ~ 45m3/day	20' Container	TDS : Max. 2300, UF / BWRO / Chlorination
Y-CUBE-SW30	App. ~ 30m3/day	20' Container	TDS : Max. 1500, UF / SWRO / Chlorination

* Above specification is an example only and it is possible to change according to the component and material

SMART&COMPACT WATER TREATMENT SYSTEM



3. DISSOLVED AIR FLOATATION (DAF) PACKAGE



INTEGRATED STRUCTURE / COMPACT / AUTOMATION SYSTEM / CUSTOMIZED PRODUCTION

- + Remove TSS about 99% and COD about 85%, economical maintenance, apply each standard type and customized type variously according to the flow rate
- + Easy to cope with load change with solid-liquid separation method
- + Not necessary high load foundation or support than other products
- + Secure optimized facility capacity and stable treated water quality
- + Possible to check real-time facility status by constructing mobile interlocking system
- + Various option : Platform & Stair, Cell Cover, Flocculation mix tank, Monitoring Sensors, Chemical Injection System
- + Application : Sewage treatment plant, beverage, paper-making, oil & gas, pre-treatment facility of chemical, oil refining and power plant
- + Standard capacity : 100 m3/day ~ 1200 m3/day

Models	Capacity	Dimensions	Weight
Y-DAF-RT05	App. ~ 100m3/day	W1250 x L3700 x 2450mmH	App. 1300 kg
Y-DAF-RT10	App. ~ 200m3/day	W1500 x L4700 x 2800mmH	App. 2200 kg
Y-DAF-RT20	App. ~ 400m3/day	W2100 x L5300 x 3200mmH	App. 3500 kg
Y-DAF-RT30	App. ~ 700m3/day	W2450 x L6100 x 3500mmH	App. 3800 kg
Y-DAF-RT40	App. ~ 900m3/day	W2450 x L6500 x 3600mmH	App. 3800 kg
Y-DAF-RT50	App. ~ 1200m3/day	W2450 x L7000 x 36500mmH	App. 4000 kg

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SMART&COMPACT WATER TREATMENT SYSTEM



4. CHEMICAL INJECTION PACKAGE



INTEGRATED STRUCTURE / COMPACT / AUTOMATION SYSTEM / CUSTOMIZED PRODUCTION

- + Easy to operate and maintenance by constructing full automation system
- + Minimize necessary installation space with optimized component design
- + Design and production according to chemical type and specification
- + Efficient operation and chemical cost reduction by the interlocking with water quality analysis package
- + Possible to check real-time facility status by constructing mobile interlocking system (Option)
- + Application : Apply on the plant necessary to inject chemical in all areas of industrial process such as power plant, chemical, seawater desalination plant, water supply and sewage, etc.

Capacity	Dimensions	Weight
50L	W400 x L400 x 500mmH	App. 50 kg
100L	W500 x L500 x 600mmH	App. 70 kg
200L	W600 x L600 x 900mmH	App. 100 kg
300L	W750 x L750 x 900mmH	App. 130 kg
500L	W1100 x L950 x 900mmH	App. 250 kg
1000L	W1100 x L950 x 1400mmH	App. 300 kg
1500L	W1350 x L1200 x 1400mmH	App. 350 kg
2000L	W2300 x L950 x 1400mmH	App. 450 kg
3000L	W2800 x L1200 x 1400mmH	App. 700 kg

* Above specification is an example only and it is possible to change according to the component and material

** Calculate based on top mounting type metering pump on the basis of PE square pump

5. WATER ANALYSIS PACKAGE



| PH/ORP Sensor (GF SIGNET) |

- Provide waste water, pure water and ultra-pure water application
- Provide application optimized to chemical and severe environment



| Conductivity/Resistivity Sensor (GF SIGNET) |

- Measure conductivity from ultra-pure water to brine



| DO Sensor (GF SIGNET) |

- Possible to measure for water purification, sewage, waste water and all industrial group



INTEGRATED STRUCTURE / COMPACT / AUTOMATION SYSTEM / CUSTOMIZED PRODUCTION

- + Record measured value measuring sampling water quality and possible to automated operation by alarm function
- + Possible to produce as closed type and open type according to the customer's demand
- + Protect the facility with real-time water quality measurement
- + Provide differentiated service by cooler and pressure reducing control in case of high temperature and high pressure boiler water
- + Possible to check real-time facility status by constructing mobile interlocking system (Option)
- + Possible to select every kinds of sensor by the maker

- + Application : Apply on the plant necessary to inject chemical in all areas of industrial process such as power plant, chemical, seawater desalination plant, etc.

SMART&COMPACT WATER TREATMENT SYSTEM



6. HYPOCHLORITE GENERATOR PACKAGE

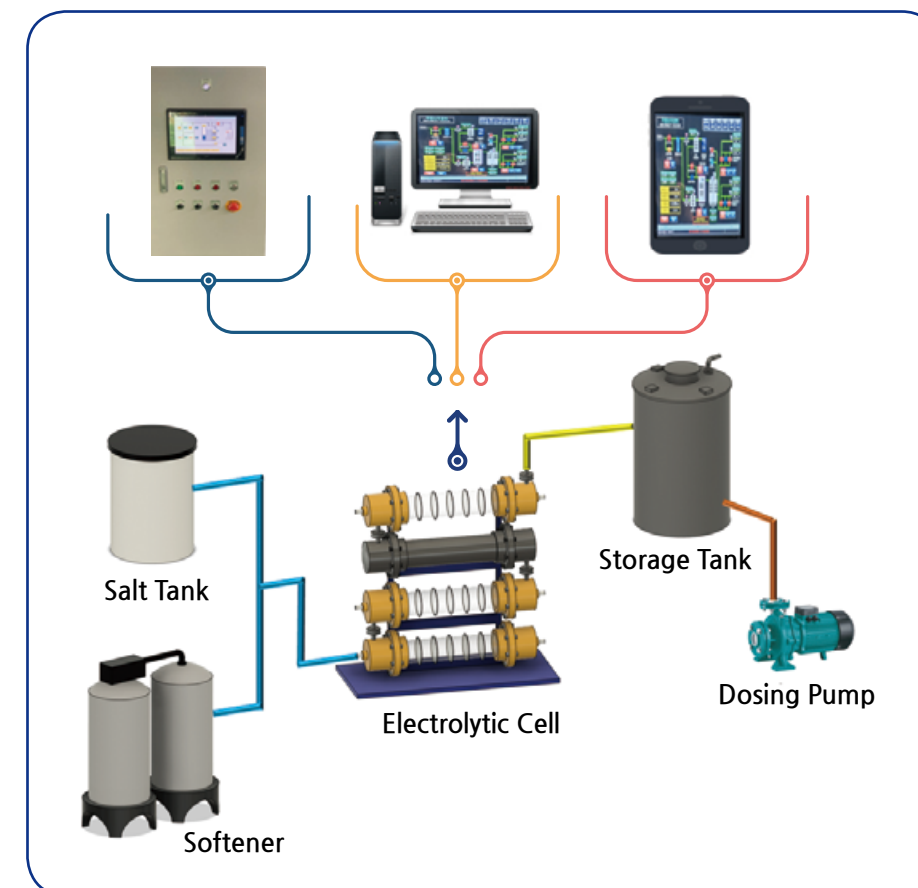


- 1 Hypochlorite Generator + supplementary equipment "Integral modularity" ▶ Dramatically reducing the production cost and installation space in equipment introduction
- 2 Automatic Drainage System ▶ Prevent re-input of disinfection by-products
- 3 Diluted Brine Storage System ▶ Diluted brine stabilization time is not necessary
- 4 Automatic Washing System ▶ Reducing equipment maintenance personnel and cost

ICT TECHNOLOGY APPLICATION / INTEGRAL STRUCTURE / COMPACT / AUTOMATION SYSTEM

- + Possible to check real-time facility status with mobile interlocking system as ICT based Hypochlorite Generator
- + Constructing ICT based main part replacing time and estimation system
- + Dramatically decreasing installation space by integral modularity
- + Stabilizing hypochlorite production concentration (0.8%) with diluted brine storage system application
- + Prevent re-input of disinfectant by constructing automatic drainage system
- + Optimized in maintenance by applying electrolytic cell automation washing system
- + Produced hypochlorite quality : Within class 1 (8,000 ppm), disinfection by-products : Within class 1
- + Application : Seawater sterilization, water supply/sewage and distribution reservoir chlorination and cooling tower

Smart Management System



* ICT based Maintenance Process

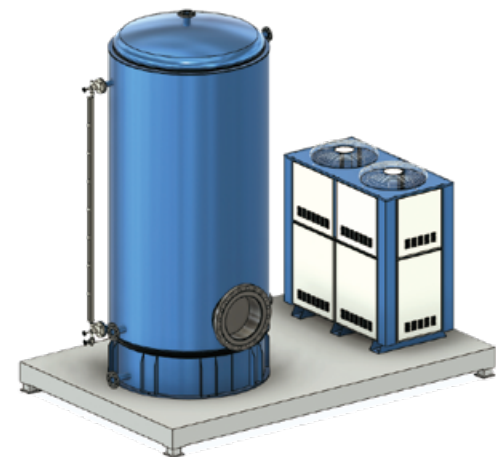
- Mobile real-time check of facility status
- Mobile control of facility
- Data accumulation and making big data for major facilities
- Major part replacement time and failure estimation system

Models	Handling capacity (m3/day)	Effective chlorine production capacity (kg/d)
Y-HG-02	1000	2
Y-HG-03	1500	3
Y-HG-06	3000	6
Y-HG-09	4500	9
Y-HG-12	5500	12
Y-HG-18	7500	18
Y-HG-25	9000	25
Y-HG-35	12000	35
Y-HG-50	15000	50

* Maximum chlorine production capacity : Possible to produce until 500(kg/d)

SMART&COMPACT WATER TREATMENT SYSTEM

7. HYPOCHLORITE COOLING PACKAGE

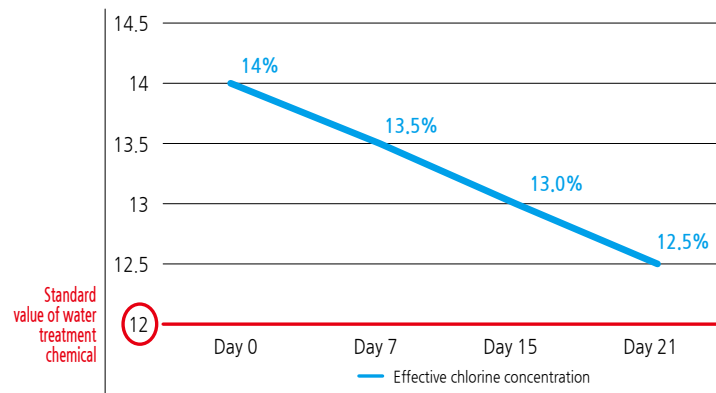


ICT TECHNOLOGY APPLICATION / AUTOMATION SYSTEM / CUSTOMIZED PRODUCTION

- + Possible to check real-time facility status with mobile interlocking system as ICT based Liquid Chlorine Dosing System
- + Constructing ICT based part replacement time and estimation system
- + Maximizing cooling efficiency by acid resistant coating and external heat block material application
- + Increasing operation convenience such as the alarm for internal and external temperature and water level
- + Satisfying the standard for the concentration by automatic temperature control and water treatment chemical for disinfection by-products
- + Optimized for maintenance by applying automatic washing system
- + Decreased cooling time by applying dual titanium coil
- + Satisfying the standard for the concentration by automatic temperature control and water treatment chemical for disinfection by-products (Possible to store maximum 27 days)
- + Application : Water supply/sewage and distribution reservoir chlorination, cooling tower and deodorization facility



Screen for real-time facility status with mobile interlocking system
[Possible to check real-time facility status]



Completed sodium hypochlorite concentration and disinfection by-products amount
generated test by official institute [Possible to store maximum 27 days]

Models	Storage capacity (L)
Y-HC-100~100,000	100~100,000



ICT TECHNOLOGY APPLICATION / INTEGRAL STRUCTURE / SIMPLE INSTALLATION AND MAINTENANCE

- + Possible to check real-time facility status with mobile interlocking system as ICT based Liquid Chlorine Dosing System
- + Possible to install in limited space with integral panel type
- + Easy to operate with automatic control system application
- + Autonomous cooling system (Option)
- + Application : Food sterilizing, swimming pool, fountain, sauna, etc.
- + Storage capacity : 50L

Special Features of Product

- + Sterilization system of norovirus, colon bacillus and general bacteria
- + Input chemical safety by proportional control in comparison with measured concentration of free chlorine remaining in the water
- + Reducing chemical consumption with quantitative chemical dosing in comparison with concentration
- + Automatic maintenance with allowable concentration (0.2ppm - 1.0ppm) of chlorine
- + Simple installation and maintenance is possible
- + Realized stability and high level sanitation management by managing chemical input by the customer grafting ICT technology
- + Applied corrosion prevention technology on facility enclosure

Y-SC (Sodium Hypochlorite - Control System)

- + Composition : Case · Free Residual Chlorine Meter · Automatic Control System

Y-SCP (Sodium Hypochlorite - Control Package System)

- + Composition : Case · Free Residual Chlorine Meter · Automatic Control System · Metering Pump · Level switch · Refined sodium hypochlorite 20L (Option) · Autonomous cooling system (Option)

Y-SPP (Sodium Hypochlorite & PH - Control Package System)

- + Composition : Case · Free Residual Chlorine Meter · PH Meter · Automatic Control System · Metering Pump · Level switch · Refined sodium hypochlorite 20L (Option) · PH Regulator 20L (Option) · Autonomous cooling system (Option)

Models	Measuring Range	Handling Capacity	Size
Y-SC	0.00 - 4.00ppm	300 ton or less	W 500 × L 200 × H 300
Y-SCP	0.00 - 4.00ppm		W 700 × L 500 × H 1300
Y-SPP	0.00 - 4.00ppm 0.00 - 14.00ph		W 700 × L 500 × H 1300

MARINE WATER TREATMENT SYSTEM



1. CHEMICAL INJECTION PACKAGE

(1) CHEMICAL AUTO INJECTION UNIT



INTEGRAL STRUCTURE / COMPACT / ASSEMBLY TYPE / AUTOMATION SYSTEM

- + Possible to install in limited space of ship with integral type of storage tank and equipment
- + Certified and passed USCG standard vibration test for PE Tank
- + Certified and passed KS C IEC standard impact test for PE Tank
- + Completed material test of Korea Testing & Research Institute (KTR) for PE Tank
- + Possible to assemble at site with assembly structure of PE Tank and frame
- + Easy to increase necessary capacity with the possibility of blocking for each capacity
- + Maximized efficiency with full automatic composition when it is necessary
- + Application : Chemical Dosing System in the ship
- + Dosing capacity : 0~208L/HR
- + Storage capacity : 0~3000L

(2) CHEMICAL AUTO DISSOLVING UNIT



INTEGRAL STRUCTURE / COMPACT / ASSEMBLY TYPE / AUTOMATION SYSTEM

- + Possible to install in limited space of ship with integral type of storage tank and equipment
- + Certified and passed USCG standard vibration test for PE Tank
- + Certified and passed KS C IEC standard impact test for PE Tank
- + Completed material test of Korea Testing & Research Institute (KTR) for PE Tank
- + Dramatically increased the stirring capability by applying developed stirrer impeller
- + Complete corrosion prevention with PE bearing housing application
- + Possible to control internal temperature by applying heater
- + Maximized efficiency with full automatic composition when it is necessary
- + Application : Chemical Stirring System in the ship

2. WATER ANALYSIS PACKAGE

TRO SENSOR UNIT



- + A sampling equipment to check TRO concentration and an equipment not discharging more than definite concentration by checking TRO concentration in real-time
- + Possible to produce each explosion-proof and non-explosion-proof type
- + Composition : Sampling pump, TRO sensor, automatic and manual valve, explosion-proof heater, decompressive valve

SAMPLING UNIT



- + An equipment to transfer sampling water for TRO concentration check to TRO Sensor Unit
- + Possible to produce each explosion-proof and non-explosion-proof type
- + Composition : Sampling pump, automatic and manual valve, air unit

DRAIN UNIT



- + An equipment to store sampling water passed TRO concentration measurement when de-ballasting
- + Possible to produce each explosion-proof and non-explosion-proof type
- + Composition: Storage tank, transfer pump, automatic and manual valve, water gauge, air unit



SAFE WATER SAVES LIVES

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