

SAMKUN

CENTURY CO., LTD



■ Water Treatment Equipment

(BWMS, F.W. Generator, F.W. Supply Unit, H.P. Pump Unit, etc.)

■ On Shore Plant

(Water Treatment Sys, Waste Water Treatment Sys)

■ Pipe Coating

(PE, PA, Metalizing, Rubber Lining)



INTRODUCTION

One of the leading companies specialized in water treatment in Korea, Samkun Century Co., Ltd. always contribute to customer's satisfaction and national development.

Since 1989, We, Samkun Century, have manufactured and supplied Fresh water & Potable water treatment system to our clients.

We have always strived to develop new products, and succeeded in localization of Silver Ion Sterilizer. In addition, we have developed various products such as Re-hardening Filter and RO Type Fresh Water Generator. Now we supply technology-intensive Fresh Water Supply Unit not only ship but offshore plant.

To develop as the global top-tier company which provides customer with high quality products and best service, we aim to achieve the company values with the below quality policies.

Raising company values as securing the high technical skills

Quality management in accordance with the fundamental principles

Strengthening company competitiveness by continuous process improvement





CEO Message

First of all, we would like to cordially express our gratitude for your continuing interest and support.

Samkun Century was established in 1989, and has since advanced the innovation of new technology for more than 30 years. Our willingness and ability to take on new challenges have driven our corporate success while contributing to the development of Offshore plant, Marine, Navy, and Onshore equipment package modules.

We have persevered in our efforts to supply the best quality and service to our clients while always following the motto, "Always, like the beginning". We will strive to make positive changes in the environment and contribute to humanity and society for future generations.

Thank you.

President *Jung Il Kang*





History (2010~)

2023.11	Designated leading environmental company for 2023
2023.10	ARA Plus+ BWMS USCG Type Approval
2023.06	Selected as a 'national Defence Venture Center partnership' : KRIT
2023.06	Acquired Innovative Water Treatment Company Certificate : Ministry of Environment
2022.09	ARA Plus+ BWMS KR Type Approval
2022.07	ARA Plus+ BWMS Panama Flag Approval
2022.07	ARA Plus+ BWMS Code New G8 Type Approval
2022.04	Certificate for professional company in Material, Components and Equipment : KEIT
2021.11	Certificate of ESG Excellent Company
2021.09	ABS Pressure Vessel Factory Approval Certificate
2021.05	Selected as 'National Representative of Innovative Enterprises 1000'
2021.04	Small Giant Company of Korea
2020.09	IECEX Certificate of Conformity (BWMS UV MODULE)
2020.07	Confirmation of root company
2020.07	Designated as a promising Export Firm
2020.04	Excellent job invention compensation company certificate
2019.07	Performance certification : Ministry of SMEs and Startups
2019.05	Maintenance qualification certificate
2019.03	Corporate certificate for parts and materials: Ministry of Trade, Industry and Energy
2018.08	PANAMA MARITIME AUTHORITY type approval (BWMS)
2017.07	Acquired RS type approval (BWMS)
2015.02	Acquired BV type approval (BWMS)
2014.10	Liberian Registry type approval (BWMS)
2014.01	UV sterilizer NIPH type approval (SK11-JSD)
2013.11	Acquired KR Type Approval (BWMS)
2013.10	AMS Acceptance by USCG (BWMS)
2012.07	Type Approval by Korean Government (BWMS)
2011.01	Acquired KUN MARK from KCL
2010.12	Selected as a membership of the exemplary medium enterpriser
2010.10	Awarded a presidential citation
2010.10	Acquired FINAL Approval by IMO (BWMS)
2010.03	Acquired BASIC Approval by IMO (BWMS)
2010.03	Awarded an honor by the administer of NTS
2010.01	Selected as an excellent cooperative company and gained a Suckryu medal by DSME





History (1989~2009)

- 2009.10 Acquired AA Class of HMD
- 2009.10 Registered as a Qualified Supplier in KOSPO
- 2009.10 Acquired K MARK from KTL
- 2009.09 UV sterilizer NIPH type approval (JSC40)
- 2009.07 Selected as a clean work place by KOSHA
- 2009.07 Obtained a qualification of competitive bid Joining by the office of supply Administration
- 2009.01 Acquired ASME STAMP

- 2008.03 Approved for GL classification
- 2008.03 Acquired ISO9001 & ISO14001

- 2007.12 Awarded first prize of venture enterprise by DSME
- 2007.08 Dolomite NIPH type approval
- 2007.08 Moved Head Office
- 2007.06 Dolomite NSF type approval
- 2007.05 Acquired authentication of NSF
- 2006.07 Selected as a technical innovation Enterprise
- 2006.01 UV sterilizer NIPH (JSB-1,3,5,10,20,30)
- 2006.01 Established a R&D Institute

- 2004.09 Technical cooperation with German specialized PA coating company
- 2004.03 Registered as a cooperator along STX, SHI, DSME, HMD & HHI Acquired
- 2003.04 ISO 9001:2000
- 2003.04 Technical cooperation with a Japanese specialized coating Company
- 2002.07 Acquired "Water"Mark which means water purifier manufacturing approved
- 2002.06 Acquired DNV Classification
- 2002.04 Acquired KSA 9001:2001

- 2001.10 UV sterilizer NIPH type approval (JSA-5000)
- 2001.09 Established Samkun PNC
- 2000.12 Acquired Europe Safety Standard CE Mark
- 1998.06 Moved factory
- 1998.04 Joined in the Korea Shipbuilding Material Industry Cooperative association
- 1998.02 Converted into the Corporative Institution named Sam-kun century
- 1989.11 Established Su-Hyang Industry
(Producing Shipbuilding material & Water purifying system)





Local Factory Network

Republic of Korea



Main Factory (Headquarter)

- ▶ Ballast Water Management System
- ▶ Fresh Water Supply Unit
- ▶ Sterilizer (UV, Ozone, Silver Ion, Auto Chlorinator)
- ▶ Pipe Spool
- ▶ PE/PA Coating
- ▶ Rubber Coating

405, Miyul-ro, Samnangjin-eup, Miryang-si, Gyeongsangnam-do, Korea

TEL : +82-55-338-3030

FAX : +82-55-325-0808

E-mail : sk@samkunok.com



R&D Center

- ▶ Technical Design
- ▶ Research & Development

8F, Sporex BD, 13, Geumgok-daero 285beon-gil, Buk-gu, Busan, Korea

TEL : +82-55-338-3030

FAX : +82-55-332-7123

E-mail : sk@samkunok.com



TSA Coating Factory

- ▶ Metalizing (TSA)

228, Yeocha-ro, Sangdong-myeon, Gimhae-si, Gyeongsangnam-do, Korea

TEL : +82-55-338-3030

FAX : +82-55-312-0685

E-mail : pnc@samkunok.com

Water
Treatmet
Factory

PE/PA
Coating
Factory

BWMS
Factory

Miryang

Gimhae

TSA

Busan

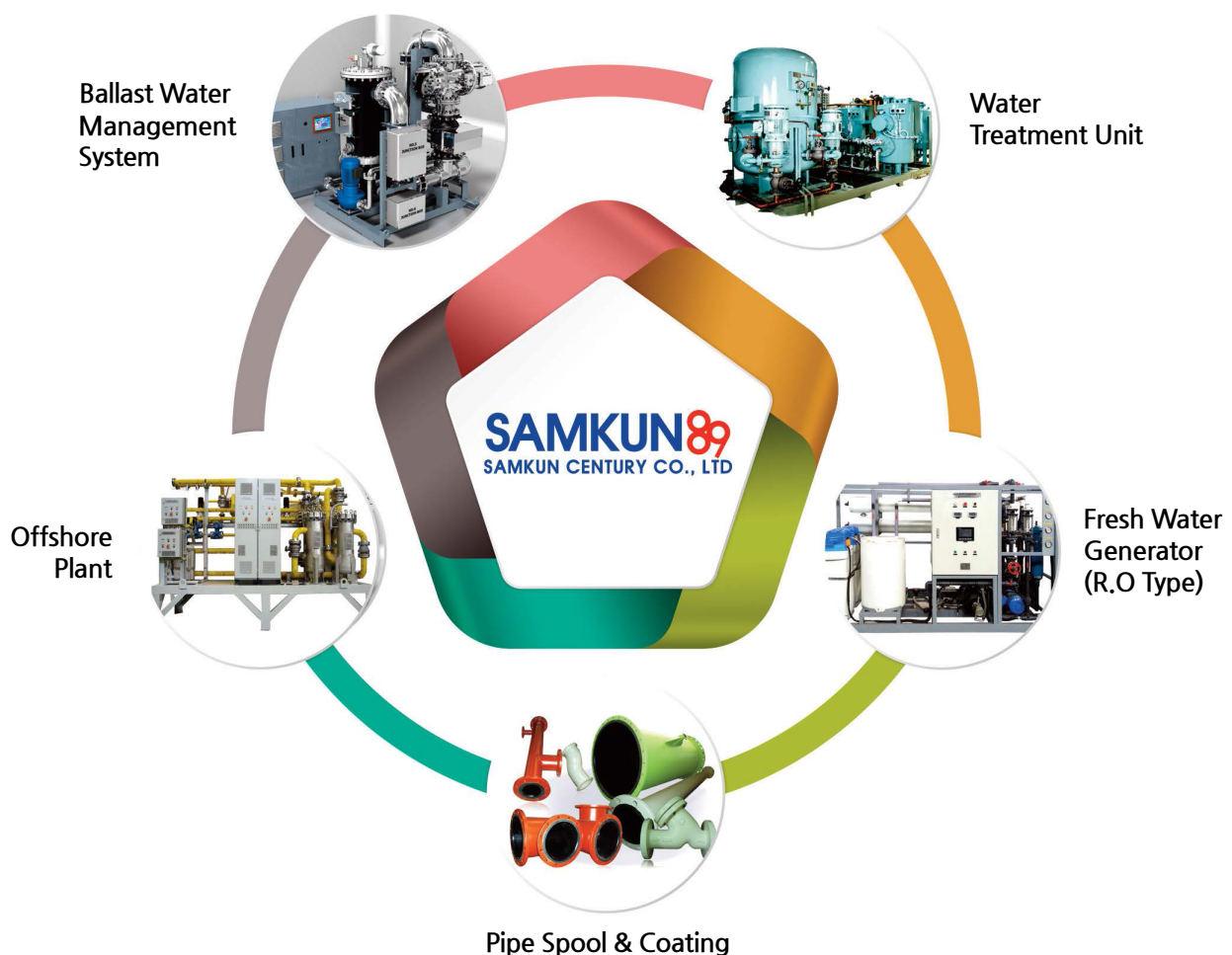
R&D
Center



Business

Samkun Century has been a professional company based on steady growth and a solid profit structure.

We have advanced the development of new technologies and have established a solid foothold in the marine equipment industry based on a solid profit structure. We started in water treatment equipment specializing by including many kinds of sterilizer for 30 years. Since then, to strengthen our competitiveness in the global market, our company has diversified into offshore plants, ballast water treatment systems, coating, painting and pipe spools.





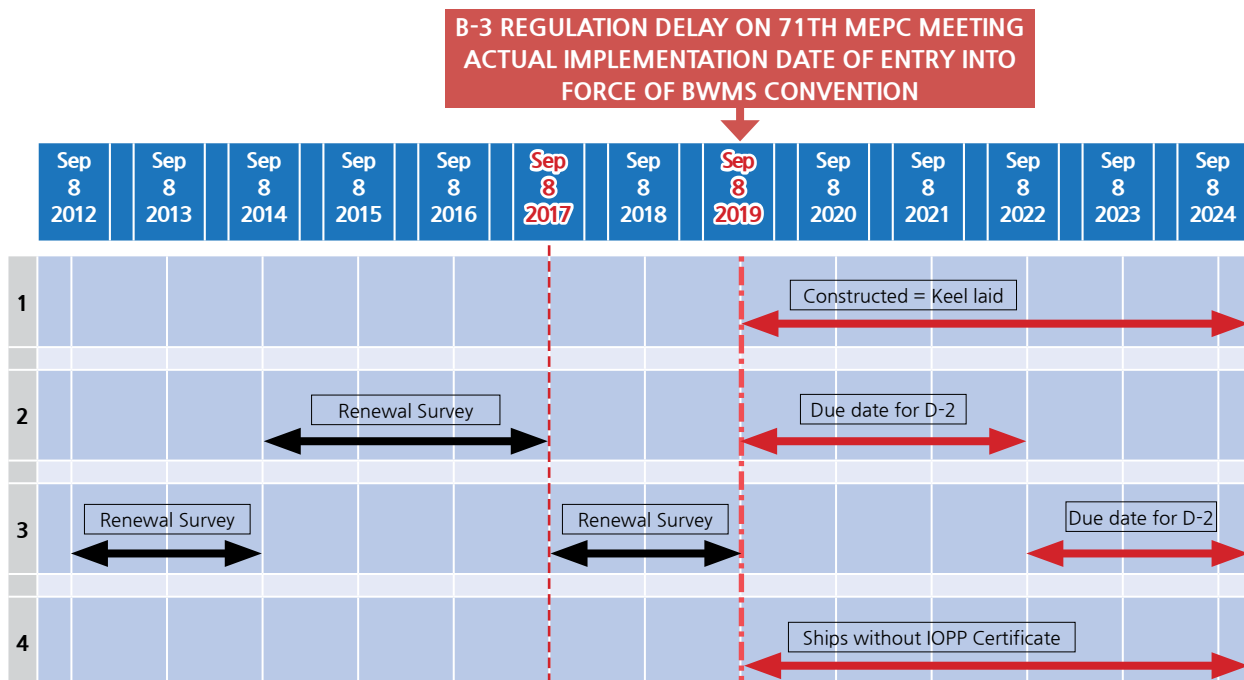
IMO Regulation

■ ■ D-2 Ballast Water Performance Standard

- ▶ Over 50 μ m : Less than 10 inds/m³
- ▶ 10~50 μ m : Less than 10 inds/ml
- ▶ Bacteria
 - Escherichia Coli : Less than 250 cfu/100ml
 - Intestinal Enterococci : Less than 100 cfu/100ml
 - Vibrio Cholerea : Less than 1 cfu/100ml

■ ■ B-3 Ballast Water Management Implementation Schedule

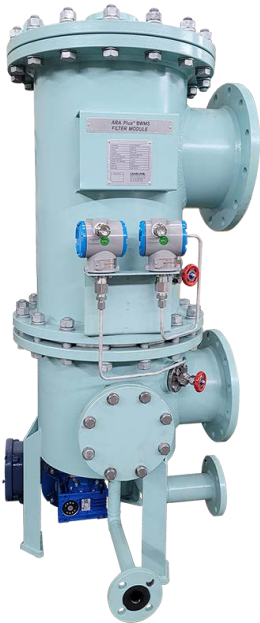
- ▶ New Ships shall be installs BWMS before delivery
- ▶ Existed ship shall be installs BWMS from 8th September 2019 according to IOPP renewal period



1. Ships constructed on or after 8 September 2017 shall comply with D-2 standard as of ships delivery (Constructed = Keel Laid).
2. A case where previous IOPP renewal survey had been completed between 8 September 2014 and 7 September 2017, the ships shall comply with D-2 standard by the first IOPP renewal survey after entry into force of the Convention.
3. A case where previous IOPP renewal survey had been completed between 8 September 2012 and 7 September 2014, the ships shall comply with D-2 standard by the second IOPP renewal survey after entry into force of the Convention.
4. Ships not subject to IOPP renewal survey (normally less than 400GT) shall comply with D-2 standard by 8 September 2024.



ARA Plus+ BWMS

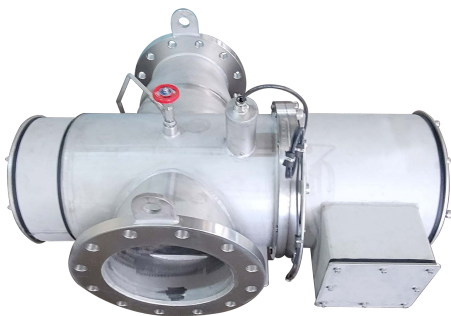


FILTER

It removes large particles and organisms larger than $50\mu\text{m}$ in ballast water. It automatically removes any substances in filter cartridges by housing an internal pressure increase. It is highly accurate and reliable.

-Specifications-

- ▶ Mesh size : $50\mu\text{m}$
- ▶ Design pressure : 6.6 bar
- ▶ Max. working temp : 50°C
- ▶ Power Source : 3Phase, AC 380/440V 50/60Hz



ULTRA-VIOLET

It has a high performance in disinfecting bacteria and viruses (which are smaller than $50\mu\text{m}$). There are no formations of residual toxins or harmful substances. Uses a wavelength of UV-C (200~280nm) to sterilize microorganisms.

-Specifications-

- ▶ UV sensor : $0\sim 500\text{ mW/cm}^2$
- ▶ Temperature sensor : PT-100
- ▶ Wiper Seal : EPDM
- ▶ UV chamber : STS 316L



CONTROL PANEL

Users conveniently operate "ARA Plus+ BWMS" by touchscreen. The status of each module and any alarm messages are easily monitored in realtime. The control panel consists of four parts; monitoring & operating, main switch, emergency stop switch and cabinet ventilators.

-Specifications-

- ▶ Control panel type : PLC type(Auto)
- ▶ Power Source : AC 230V, 1Phase & DC 24V
- ▶ Frequency : 50/60 Hz



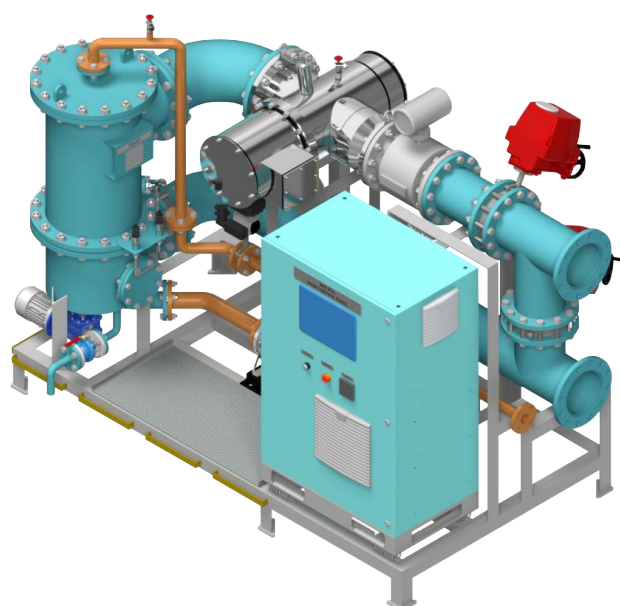
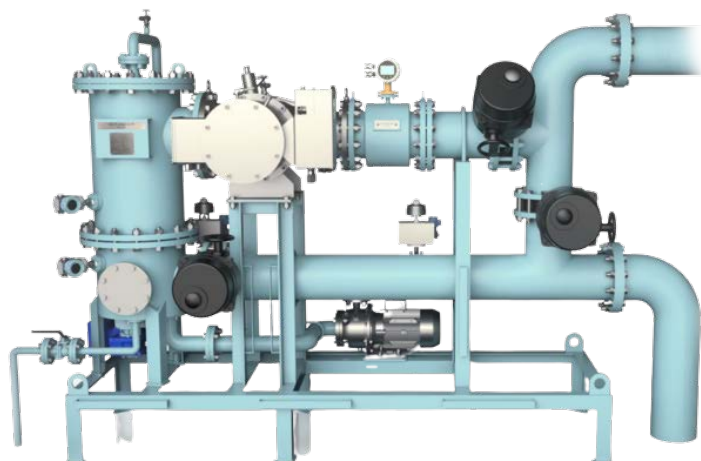


ARA Plus+ BWMS

LINE UP

NO	MODEL	CAPACITY (m3/hr)	FILTER	DIMENSION (mm)	
				UV	CONTROL PANEL
1	AP-150 / AP-150 Ex	150	Ø406x1473	650 x 518 x 1016 / 1088	800 x 500 x 1350
2	AP-250 / AP-250 Ex	250	Ø406x1473	650 x 544 x 1016 / 1088	800 x 500 x 1350
3	AP-400 / AP-400 Ex	400	Ø660x1488	700 x 562 x 1016 / 1088	800 x 500 x 1700
4	AP-650 / AP-650 Ex	650	Ø762x1631	750 x 588 x 1016 / 1088	800 x 500 x 1700
5	AP-800 / AP-800 Ex	800	Ø1016x1998	APUV-400 x 2	APMCP-400(M) APMCP-400(S)
6	AP-1300 / AP-1300 Ex	1300	Ø1016x2198	APUV-650 x 2	APMCP-650(M) APMCP-650(S)

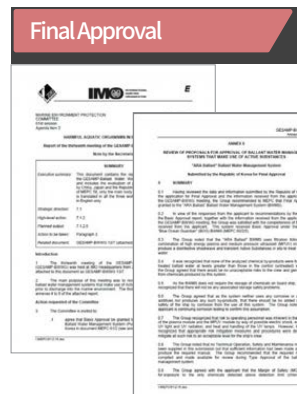
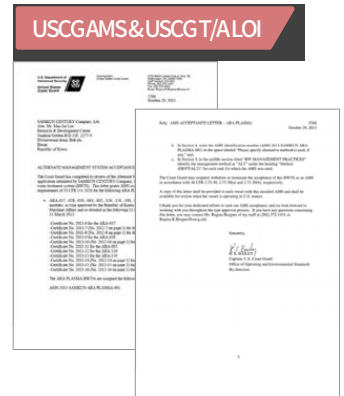
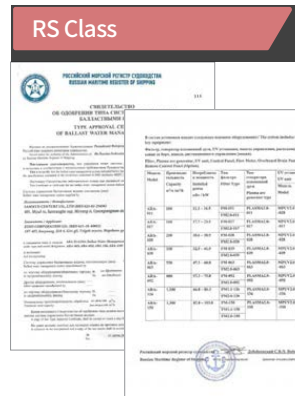
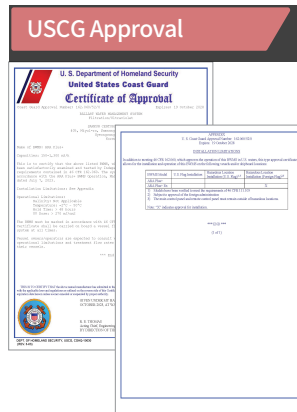
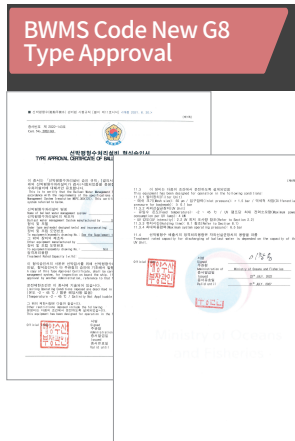
► 3D Modeling View





ARA Plus+ BWMS

ARA Plus+ BWMS was developed by SAMKUN CENTURY and ARA Plus+ BWMS approved by BWMS Code (=New G8 Type Approval) in 2022 and also USCG Type Approval in 2023





ARA Plus+ BWMS

ADVANTAGES

ECO-FRIENDLY

- No chemical substances used
- No by-products generated
- No neutralizing agents used, therefore no secondary pollutants

CONVENIENCE

- Simple maintenance
- Easy installation to newly constructed and existing vessels
- Easy operation by an automatic control system

COST-EFFECTIVE

- Competitive Price
- Compact size with minimal foot print
- Low Power Consumption

ADVANTAGE

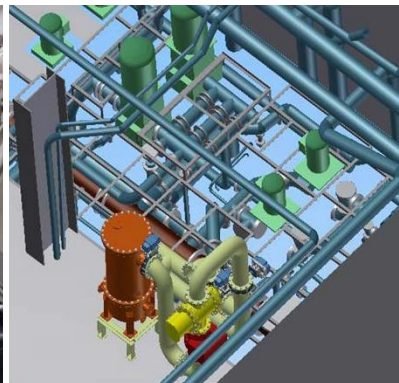
- Exceptional performance of the ARA Plus+ BWMS in high levels of turbidity
- Differentiation of leakage sensor in UV chamber
- Use of inner polyethylene coating pipes

SAFETY

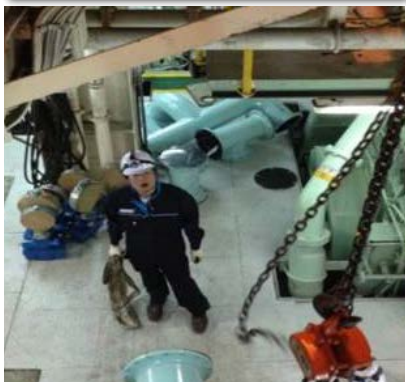
- Safety for the marine environment
- Safety for your assets and people

Retrofit Procedure

1. Pre-survey & Design



2. Installation on-board



3. Commissioning & Training



Offshore Plant Division

Since 1989, Samkun Century has manufactured and supplied Fresh water & Portable water treatment systems to our clients. We have always strived to be innovative by developing new products; products like our UV sterilizer, Re-hardening Filter and Silver Ion sterilizer.

And because of our drive for excellence, we now supply tech-nology-intensive Fresh Water Supply Units.

■ ■ ■ UV Sterilizer



The UV sterilizer of Samkun Century has a superior operating system. It protects mineral components, but disinfects typical viruses, colitis germs and bacteria in water.

Emission of ultra violet rays : 253.7nm

(Most effective wavelength for removing bacteria)

■ ■ ■ Hot Water Calorifier



Hot Water Calorifier is designed to proper in environmental conditions of the vessel, and supply hot water. Setting temperature is automatically maintained by Steam heater (or Electric heater). Supplied hot water is used for shower, cooking, and feeding.

■ ■ ■ High Pressure Washing Pump Unit



High Pressure Washing Pump unit is washing machine for Deck and Tank by using over 160bar high pressure. It consists of HP pump, Tank and Spray Gun etc. If the self closing type connector is installed where cleaning is re uired from the vessel, It can operate in the desired area through a transportable hose reel.

■ ■ ■ Hydrophore Tank



The purpose of Hydrohpore thank is to store fresh water and maintain its pressure.The Hydrophore tank is commonly made by Carbon steel, and the inside is coated with a harmless coating of paint. In addition the manhole of each tank keeps the inside clean. Destructive Test is done for all welding points to secure safety. (Hydrophore tank can be made by Stainless Steel as well).



Auto Filter (Sea water/Fresh water)



Our AutoFilter is pre-treatment filter system with automatic backwash. It consists of several Filter elements on a rotating plate with a drive shaft. Differential pressure is detected automatically and each filter element is back-washed without interruption of filtration process. Mainly it is used for pre-treatment of Seawater Cooling pipe line and BWMS in field of Marine, and also used for pre-treatment of Seawater Cooling pipe line in field of onshore plant.



Grease Trap



"Grease" is an industrial term for animal fats and vegetable oils from waste water in the kitchen. Specific gravity of Grease is 10~15% below water, so Grease doesn't mix with water. The Grease Trap is an essential component of sewage pipes designed to separate the grease from water.



Pressure Vessel



Based on our own design and production technology, we supply various Pressure Vessel in various fields, including Marine Shipbuilding, Offshore plant, Power Plant, and Refinery Plant.



Sea water Supply Plant (Sea water Auto Filter)



Personal Protection Cover





Offshore Plant Reference list

	OWNER	PROJECT	SHIPYARD
1	BP	Atlantis Rig	DSME
2	CHEVRON	Agbami FPSO	DSME
3	SEADRILL	Drill Rig	DSME
4	ODFJELL	Semi-sub Rig	DSME
5	PETROSERV	Drill Rig	DSME
6	ODFJELL	Semi-sub Rig	DSME
7	TRANSOCEAN	Drillship	DSME
8	GRUPO R	Drill Rig	DSME
9	ODFJELL	DP Moored Rig	DSME
10	TMT	Drillship	DSME
11	ODBRECHT	Drillship	DSME
12	PETROSERV	Drill Rig	DSME
13	TOTAL	Pazflor FPSO	DSME
14	TOTAL	CLOV FPSO	DSME
15	RWEI	Wind Turbine Installation Vessel	DSME
16	STATOIL	Semi-Rig	DSME
17	EXXONMOBIL	ARKUTUN-DAGI Fixed Platform	DSME
18	TRANSOCEAN	Drillship	DSME
19	ATWOOD	Drillship	DSME
20	VANTAGE	Drillship	DSME
21	ODBRECHT	Offshore Pipe Laying Support Vessel	DSME
22	SEADRILL	Rig	DSME
23	PETRONAS	LNG FPSO	DSME
24	TRANSOCEAN	Drillship	DSME
25	PETROBRAS	P-79 FPSO	DSME
26	TRANSOCEAN	Drillship	HHI

	OWNER	PROJECT	SHIPYARD
27	GLOBAL SANTA FE	Drillship	HHI
28	DOCKWISE, NETHERLAND	Semi Sub Heavy Transport Vessel	HHI
29	DAEWOO ENGINEERING	SHWE Field	HHI
30	WOODSIDE ENERGY LTD.	NRB PLATFORM	HHI
31	NOBLE	Drillship	HHI
32	DIAMOND	Drillship	HHI
33	SEADRILL	Semi Sub Drilling Rig	HHI
34	DOLPHIN	Drillship	HHI
35	ROWAN	Drillship	HHI
36	SEA LION	Multi Purpose Offshore Construction Vessel	HHI
37	EDDA	Offshore accommodation Vessel	HHI
38	DIAMOND	Drillship	HHI
39	TOTAL	Moho Nord FPU	HHI
40	PETROBRAS	FPSO P78	HHI
41	PETROBRAS	P-78 FPSO	HHI
42	COROCORO	FPSO	SHI
43	ENFIELD	FPSO	SHI
44	TANK PACIFIC	Drillship	SHI
45	STENA	Drillship	SHI
46	MOSVOLD	Drillship	SHI
47	TANK PACIFIC	Drillship	SHI
48	NEXUS	FPSO	SHI
49	PETROBRAS	Drillship	SHI
50	STENA	Drillship	SHI
51	PRIDE	Drillship	SHI
52	STENA	Drillship	SHI





Offshore Plant Reference list

	OWNER	PROJECT	SHIPYARD
53	TANK PACIFIC	Drillship	SHI
54	SAIPEM	Drillship	SHI
55	SCHAHIN	Drillship	SHI
56	BP	SKARV FPSO	SHI
57	VASHI	ONGC	SHI
58	QGOG	Drillship	SHI
59	SEADRILL	Drillship	SHI
60	TEEKAY	Petrojarl Knarr FPSO	SHI
61	OCEAN RIG	Drillship	SHI
62	MAERSK DRILLING	Drillship	SHI
63	SEADRILL	Drillship	SHI
64	ENSCO	Drillship	SHI
65	OCEAN RIG	Drillship	SHI
66	STATOIL	FSU	SHI
67	QGOG	Drillship	SHI
68	SEA JACKS	WTIV	SHI
69	ENSCO	Drillship	SHI
70	STATOIL MARINER	FSU	SHI
71	PDC	Drillship	SHI
72	STATOIL	Drilling Jack-up	SHI
73	SHELL	Prelude LNG FPSO	SHI
74	TOTAL	Egina FPSO	SHI
75	ENI	Coral South Mozambique LNG FPSO	SHI
76	PETRONAS	ZLNG	SHI
77	ENI	CORAL NORTE FLNG	SHI
78	TECHNIP	Pipe Layer	STX
79	IOOC	FSU	STX

	OWNER	PROJECT	SHIPYARD
80	NOBLE	Drillship	STX
81	PETROSERV	FDPSO Dynamic Producer	SINGAPORE
82	CHEVRON MODEC	FPSO	SINGAPORE
83	OCEAN APEX	Semi Sub Mersible Drillship	SINGAPORE
84	SEADRILL	Drillship	SINGAPORE
85	TRANSOCEAN	MODU Drillship	SINGAPORE
86	PETROBRAS	FPSO Cidade de São Paulo MV23	BRAZIL
87	PETROBRAS / TANKPACIFIC	FPSO	CHINA
88	PETROBRAS	FPSO Carioca MV30	CHINA
89	PETROBRAS	FPSO Guanabara MV31	CHINA
90	SHELL	Penguin FPSO	CHINA
91	ENI, MEXICO	FPSO MIAMTE MV34	CHINA
92	PETROBRAS	FPSO Almirante Barroso MV32	CHINA
93	BP	Tortue FPSO	CHINA
94	BP	Tortue QU	CHINA
95	PETROBRAS	FPSO Anita Garibaldi MV33	CHINA
96	EQUINOR	Bacalhau FPSO	CHINA
97	WOODSIDE	Sangomar FPSO	CHINA
98	SBM OFFSHORE	MPF B FPSO	CHINA
99	WOODSIDE	Scarborough FPU	CHINA
100	ENETI	WTIV NESSIE & SIREN	HANWHA
101	PETROBRAS	FPSO P79	HANWHA
102	PETROBRAS	FPSO P82	SEATRIUM
103	SBM OFFSHORE	MPF C FPSO	CMHI
104	EXXONMOBILE	UARU FPSO	DSIC
105	EQUINOR	FPSO BM-C-33	COSCO





Water Treatment Division



Fresh Water Supply Unit

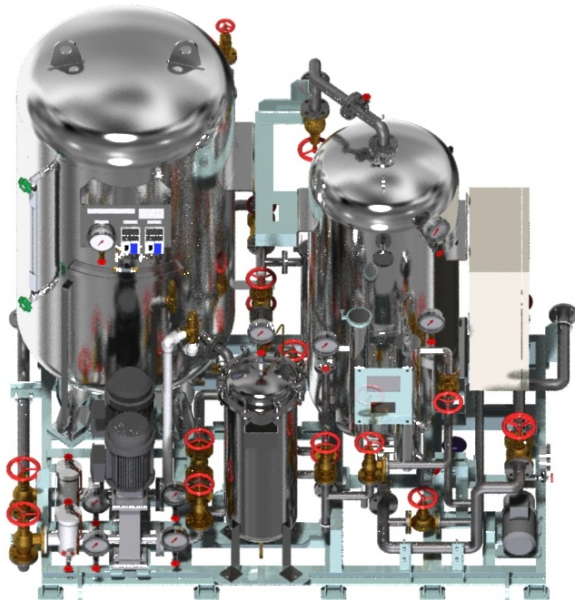
- ▶ Simple Construction
- ▶ Easy Installation
- ▶ Easy Maintenance
- ▶ Easy Operation

The fresh water supply unit supplies fresh, warm and cold drinking water to the crew and consists of a technical system of a water tank, sterilizer, re-hardening filter(mineralizer), calorifier and pumps.

- ▶ Capacity : 1,000 ~ 10,000 L/hr



3D Modeling View





Hydrophore Tank



The Hydrophore tank is a pressurized vessel that is used for drinking or the technical water supply. The hydrophore tank is a welded steel interior which is specially coated with epoxy (PE coating or Rubber coating), a manhole is provided on the tank for inspection or the cleaning of the interior. All products test the welding point by penetration inspection.

The Hydrophore unit is available in sizes from 100L to 5000L.

► Capacity : 1,000 ~ 5,000 L/hr



Hot Water Calorifier



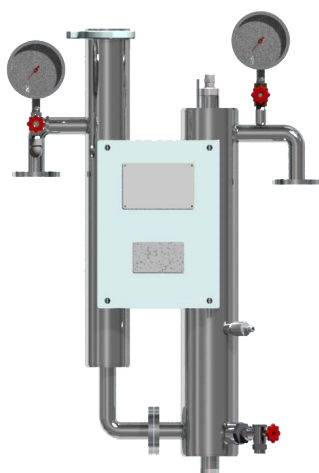
In the galley, everytime hot water is needed, our Hot Water calorifier is the perfect solution. It is used for showers, cooking, feeding etc. Calorifiers supplied for ships are specially designed to be durable from corrosion and vibration, with a long life span and easy maintenance.

► Capacity : 50 ~ 66,000 L/hr

► Temperature : 30~ 97 °C



UV Sterilizer



The UV sterilizer of Samkun Century has a superior operating system. It protects mineral components, but disinfects typical viruses, colitis germs and bacteria in water.

Emission of ultra violet rays : 253.7nm
(Most effective wavelength for removing bacteria)

► Capacity : 1,000 ~ 30,000 L/hr



Mineralizer (Re-Hardening Filter)



The water which is generated by a freshwater generator in a vessel, can not be used as drinking water directly, because of its pH value, hardness and insufficient mineral components.

Therefore using a mineralizer, increases hardness, pH-value and mineral components.

► Capacity : 1,000 ~ 30,000 L/hr



Fresh Water Generator (RO Type)

Reverse Osmosis is most commonly known for its use in drinking water purification from seawater, removing salt and other substances.

Reverse Osmosis is the process of forcing a solvent through a membrane from a region of high solute concentration to a region of low solute concentration by applying a pressure in excess of the osmotic pressure.

- ▶ Capacity : 5 ~ 20 Ton/day & Maximum 200 Ton/day
- ▶ Product Water Quality : Less than 10 or 500 ppm TDS



Compact Size Modular



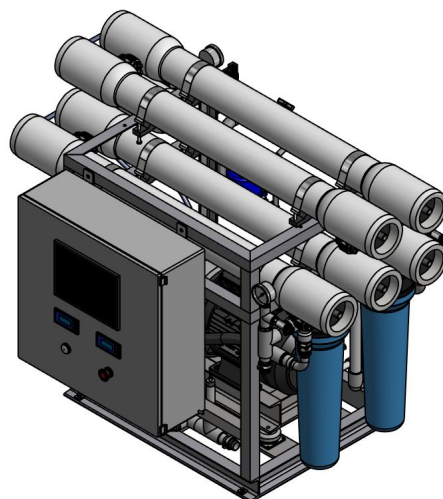
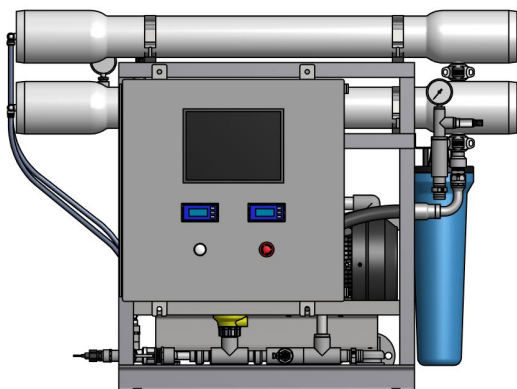
▶ Standard Features

- Paint coated carbon steel frame
- 2.5", 4", 8" Spiral wound RO membranes
- SUS316 Centrifugal pump
- FRP membrane housings
- 5 Micron cartridge prefilter
- 440V/3Ph/60Hz Power requirement
- Local control panel
- Low/high pressure switch
- Liquid filled pressure gauges
- Permeate conductivity monitor
- Permeate & Feed or concentrate flow meters
- Pipe material : UPVC, SUS316

▶ Available Options

- Membrane cleaning system
- 220V or 380-415V/3ph/50 or 60Hz
- Feed pH & ORP monitor with sensor
- Water and hour meters
- Multi media pre-filtration systems

▶ 3D Modeling View



■ Fresh Water Generator (RO Type)

Installation View



- ▶ Project : KG D6 RUBY FPSO
- ▶ Model : SK12-SRB72
- ▶ Client : Samsung Heavy Industries

Installation View



- ▶ Project : DWT 6,800 Product / Chemical Tanker
- ▶ Model : SK12-SRB10
- ▶ Client : Dae Sun Shipbuilding & Engineering



Silver Ion Sterilizer



The bactericidal effect of silver has been useful knowledge since ancient times. Silver foils were used for treating wounds and silver vessels made it possible to store water. We supply a silver ion sterilizer which removes microorganisms by a catalytic method.

► Capacity : 1,000 ~ 30,000 L/hr



Auto Chlorinator (Sterilizer)



The function of the Auto Chlorinator is to provide chlorine to water in order to sterilize water which contains a variety of bacteria, bacillus, etc. HOCL & OH Radicals are formed when chlorine dissolves in water. And they have a strong oxidizing power to destroy microorganisms during disinfection. This method can disinfect water with ease and over long periods of time.

► Capacity : 1,000 ~ 200,000 L/Hr



Ozone Generator (Sterilizer)



Ozone has been used for disinfection of drinking water in the municipal water industry for over 100 years. Ozone can be used for water and air treatment. When ozone disinfects or breaks down harmful bacteria or pollutants, there are generally no by-products. In a short period of time, all odors are simply removed.



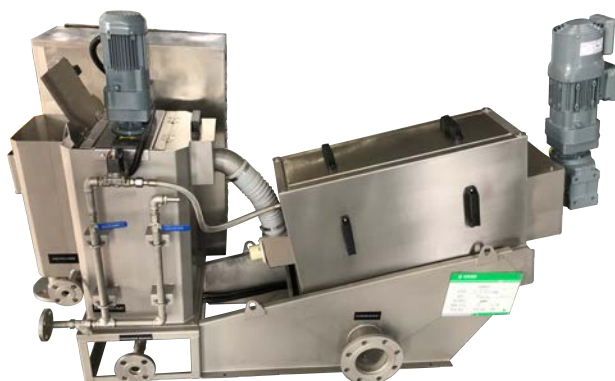
Air Dryer



Heatless Type Air Dryer

Refrigerated Air Dryer

Excessive water, and atmospheric contaminants in compressed air can cause a variety of operational problems for users of compressed air. These include freezing of outdoor airlines, corrosion in piping and equipment, malfunctioning of pneumatic process control instruments, fouling of processes and products and more. To prevent these problems, an air dryer is used for removing water vapor from compressed air.



Dehydrator

The multy plates is pressurized with screw, which is very compact compared to existing dehydrator, and power consumption is low, so operating cost can be saved. The automatic washing function enables continuous operation 24 hours a day without blockage and can be applied to various wastewater treatment.

- ▶ Water, Food
- ▶ Medicine
- ▶ Dyeing, Detergents
- ▶ Chemicals, Pharmaceutical industry



Wastewater Treatment Unit for Scrubber



It is Wastewater Treatment unit for Scrubber in Close mode or Hybrid mode for ships, and it purifies the waste water and resupply or discharge it out of ship (to meet the outboard discharge criteria). Our system is Membrane type which is very compact and easy to operate.



MGPS with strainer (Filter)



The Marine Growth Prevention System (MGPS) is designed to prevent marine life such as barnacle and shellfish by applying current to both copper and aluminum electrode rods. MGPS of SAMKUN CENTURY Co., Ltd. is integrated with STRAINER and is made COMPACT for the best effect in minimal space.

De-Ionizer(Demineralization Unit)



De-Ionizer is a device that removes all minerals that can be found in normal water. Usually, De-Ionizer is used when water is used in chemical processes or when minerals in the water can interfere with other chemicals. The device can be used extensively

in many industries and is useful in handling boiler FEED WATER on ships.

Similar devices : ION EXCHANGER and MIXED BED POLISHER (MBP)

- ▶ Capacity : 1,000 ~ 50,000 L/hr

Hot Water Boiler



The Hot Water boiler is a small electronic appliance used for boiling water and maintaining it at a constant temperature in the galley.

- ▶ Capacity : 10 L
- ▶ Wall mount type

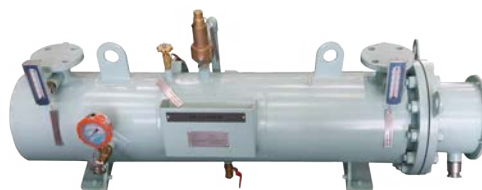
Drinking Water Fountain



The Drinking water fountain is composed of a compressor, condenser, evaporator, silver ion filter, etc. The drinking water provided from the drinking water fountain is directly connected to the fresh water line. Also, the drinking water fountain is able to provide healthy and fine tasting water due to a Silver Carbon Filter which consistently sterilizes its contents. Silver carbon is added to improve the continuity of sterilization.

- ▶ Floor stand type
- ▶ Cold water fountain
- ▶ Wall mount type
- ▶ Hot & Cold water fountain

Heater



LO PRE-HEATER

It makes proper viscosity of lubricating oil for the purifier and ME/GE by heating lubricating oil at a constant temperature.

FO PRE-HEATER

Pre-heating lowers the viscosity of heavy fuel so that it can be properly atomized by the burner.

M/E JACKET PRE-HEATER

It keeps cooling water at a constant temperature, when the engine is stopped due to repairs. This is the way to prevent problems which can occur by lowered temperature.



Fan Heater



The Fan heater works by using a fan to pass air over a heat element.

The Portable type is for ease in moving with a stainless steel heating element and all devices provide a dual protection against overheating. It has a built-in thermostat and regular power, and a powered whole metal casing cover to resist rust.

- ▶ Heating element : Stainless Steel
- ▶ Adjustable thermostat control Overheat protection
- ▶ With Fan & Cooling
- ▶ Free standing & Portable type



Emergency Eye Wash & Shower

The Emergency eye wash & shower is essential equipment when using chemicals and hazardous substances.

Its purpose is to reduce workplace injury and keep workers away from various dangers.

- ▶ Durable-Excellent raw materials / Anti corrosion
- ▶ Reliable-High quality
- ▶ Easy Installation



Grease Trap



The Grease Trap separates the grease and solids from waste water in the galley.

It is typically small enough to be installed beneath or adjacent to a sewer line.

- ▶ Capacity : 20 GPM



- ▶ Emergency shower booth type



Hydrophore system of VFD (Variable Frequency Drive)



A specific type of hydrophore system is needed for the efficiency of maintenance and saving energy. Most conventional hydrophore tanks is too heavy and occupies too much space. A VFD system is used to control process flow without the use of a separate controller. Suitable sensors and electronics are used to interface the driven equipment with the VFD.



Water Softener



Water softening is the removal of calcium, magnesium, and certain other metal cations in hard water. Soft water extends the lifetime of plumbing(pipes) by reducing or eliminating scale build-up in pipes and fittings, and extends efficiency of heat exchanger. Water softening is usually achieved using lime softening or ion-exchange resins.



Ozone Generator



An ozone generator is placed inside a foodstuff storage(Vegetable etc) in ships, Ozone is especially efficient in prolonging the life of food materials.



Emergency Shut-Off Valve System (Quick Closing Valve System)



A device that allows you to quickly and remotely close the fuel line and the valves in the tank in case of an emergency, such as a fire.



Onshore Plant Division

Water Treatment System for Onshore Plant

Installation View

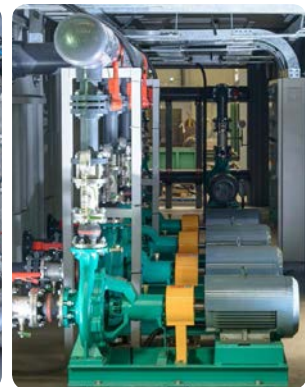


- ▶ Main Product : CPP System
- ▶ Project : S-Oil Residue Upgrading Complex Project
- ▶ Client : S-Oil



Installation View

- ▶ Main Product : Water Maker
(1,000m³/day*6train, BWRO)
PE Coating pipe etc.
- ▶ Project : Karbala Refinery Project
- ▶ Client : KOLON e Engineering



Installation View

- ▶ Main Product : Demineralized Water Package
- ▶ Project : NSRP Complex Project
- ▶ Client : KOLON e Engineering



Water Treatment System for Onshore Plant

Installation View



- ▶ Main Product : Side Steam Filter & Portable Water System
- ▶ Project : S-Oil Residue Upgrading Complex Project
- ▶ Client : S-Oil



Installation View



- ▶ Main Product : Demi Water Treatment System
- ▶ Project : S-Oil Residue Upgrading Complex Project
- ▶ Client : S-Oil

Waste Water Treatment System for Onshore Plant

Installation View



- ▶ Main Product : Biological Treatment
(3,000 m³/day*2train)
- ▶ Project : Karbala Refinery Project
- ▶ Client : KOLON e Engineering





Unit Module (SKID)

F.O. Supply Unit (for M/E)



F.O. Supply Unit (for G/E)



Fresh Water Supply Plant



Front Pipe Skid



F.O. Supply Unit (for M/E)



F.O. Supply Unit (for G/E)



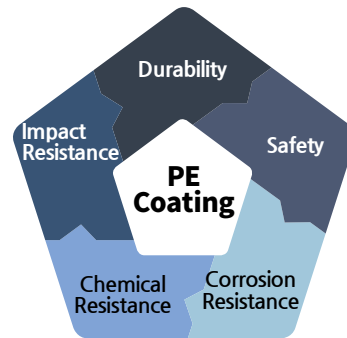
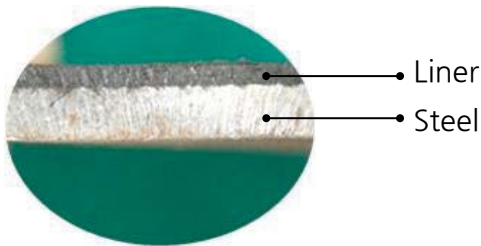


Coating Division

The Coating division supplies outstanding products which have both excellent mechanical properties from steel pipes and rust prevention properties from plastic. The Coating is resistant to seawater and organic solvents, and also doesn't contain dioxins and VOCs (Volatile organic compounds).

We maximize technical efficiency to expand usage of PE/PA coating from sea to land based on our core PE, PA Coating Technology.

PE Coating (Polyethylene)



PE Coating has been applied to Ships, Offshore plants, Power Plants, Water-Supply pipes and Steel tube plants. Main products especially have coated steel pipes for Vessels, Offshore plants and covered-steel pipes.

■ Applications

- ▶ Sea water line for Ship
- ▶ Offshore Plant
- ▶ Power Plant
- ▶ Cable Tray
- ▶ Water Pipe for Industrial
- ▶ Water Supply & Sewage Pipe
- ▶ Chemical Plant



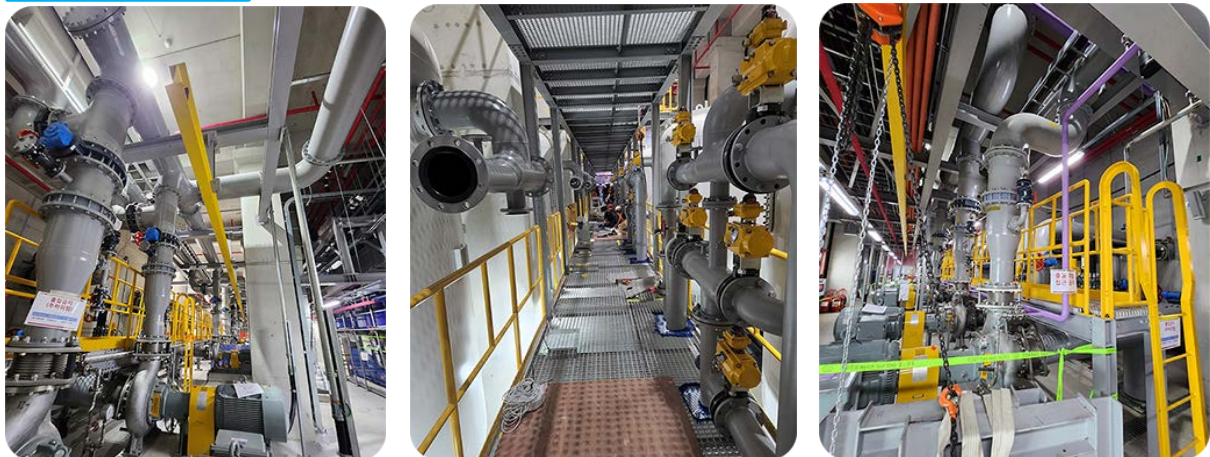
■ PE Coating Applications

Installation View



▶ Seawater desalination facility piping and LNG terminal piping

Installation View



▶ Water treatment equipment piping (Factory)

Installation View



▶ Methane gas storage

Rubber Coating

Samkun Century has a steel fabrication shop, Shot shop, Painting shop, and coating shop, and perform from various designs to construction based on accumulated technological Know-how and experience.

This material has a large number of excellent characteristics. Our Rubber is flexible and resilient, strong, and easy to manufacture. Our rubber coated products have many advantages such as excellent anti-chemical properties, anti-corrosion properties and outstanding adhesion.



Metalizing Coating



A Metalizing coating is an excellent way to protect iron and steel from corrosion. It is done at a reasonable cost, like painting, but with a long life span. Based on accumulated technological know-how and experience, we offer wind power parts to clients famous for wind power generation; businesses like Gamesa, Vestas Hyosung and Dongyang e&c.

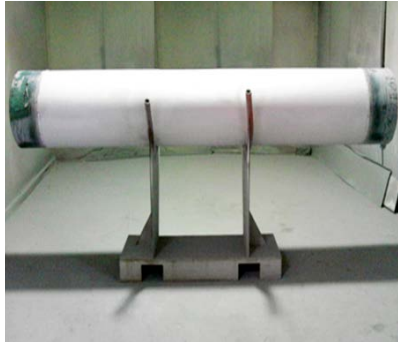
CS PIPE

Shipbuilding & Offshore project



SUS PIPE

Shipbuilding & Offshore project



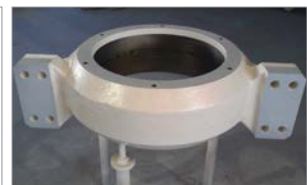
METALIZING PROCESS

Use : Wind power Size : 2MW



PA Coating (Polyamide)

The best merits of PA Coating are its high physical intensity and low gas permeability. Therefore, PA coating is suitable for high-quality products and is also capable of working on complicated compositions. At the same time, it is harmless to humans.

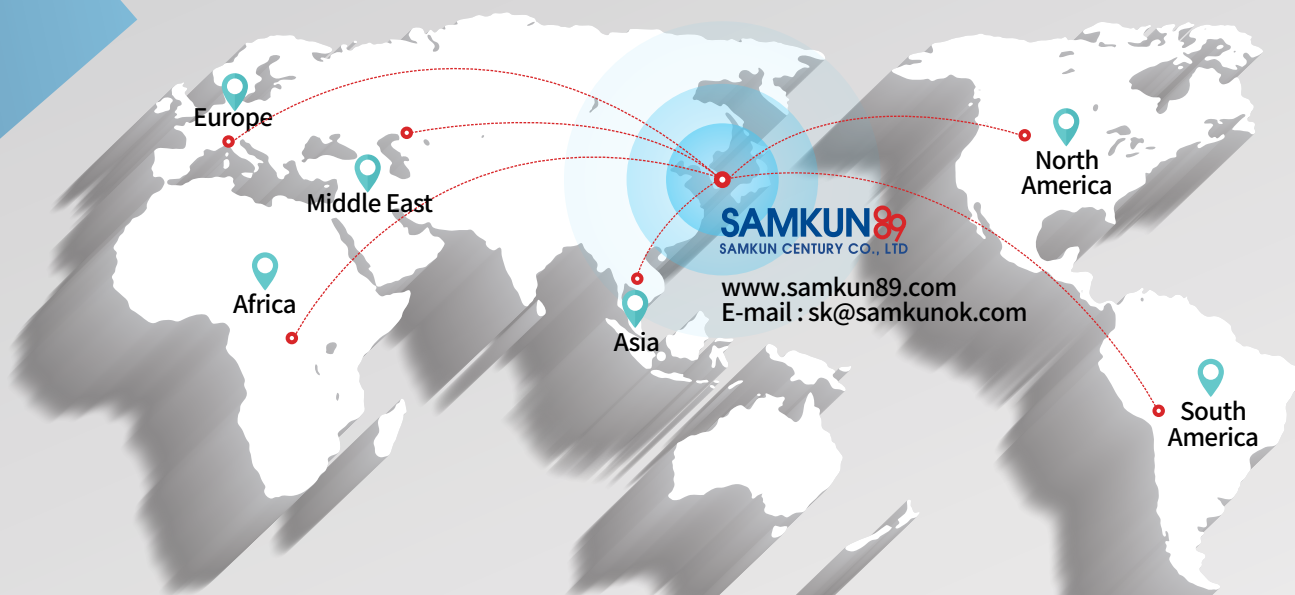


Teflon Coating

Teflon has unlimited application range from the general manufacturing industry, to high-tech semiconductors, to even the aerospace industry.



Worldwide Network



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Türkiye

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Machinery Corp
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All Marine Spares International
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USA (West)

Sammar Supply Co,
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