



SINCE 1995 蓝天电子股份

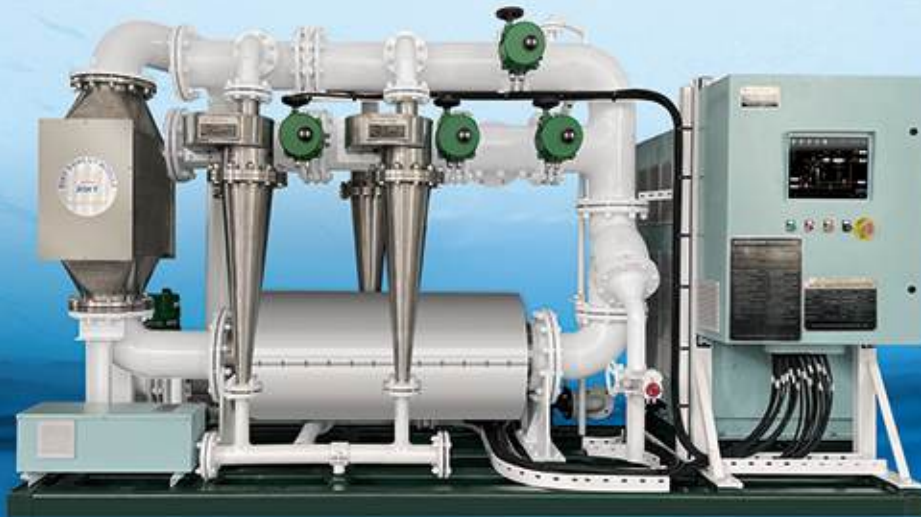
BSKY

Ballast Water Management System

 No Clogging

 Maintenance Free

 Economical



ABOUT US

Founded in 1995, Wuxi Brightsky Electronic Co., Ltd. is a high-tech enterprise specializing in R&D, manufacturing and technical services of Ballast Water Management System (Hereinafter, BWMS), firefighting systems, and relative products for both marine and land usage. Strong R & D capabilities and continuous innovation won the company more than 100 patents for inventions and utility models both domestically and abroad, and made it one of the earliest demonstration enterprises for the construction of intellectual property system in Jiangsu Province. At present, there are more than 300 employees working here, with more than 20 doctor and master degree holders, distributed in the front line of scientific research and production management. The company covers a total area of 25,000 m² and a building area of 62,700 m², and located with Jiangsu Marine Electronic Engineering Technology Center and Graduate Student Workstations.

Company' s fire control products have obtained the CCC certificate; and the BWMS have gained global type approvals such as CCS, USCG, LR, DNV, BV, ABS, KR, NK, and RS. The sales and service network covers the major ports of entire country and all over the world.

The company holds the commitment as "first-class products, first-class quality, first-class service". 20 years' development made Brightsky an enterprise enjoying reputation both domestically and abroad. We will always adhere to our mission as contributing to the safety of public lives and properties, as well as the environment sustainability.

BSKY core values: we create values for customers, opportunities for employees, and benefits for society and shareholders.

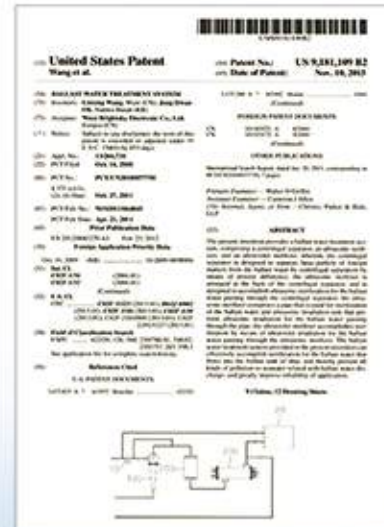


Intellectual Property

Patent

- CHINA : 2010800041745
- USA : 9181109
- EUROPE : 2412627
- JAPAN : 5780609
- KOREA : 10-0947558
- EPT : PCT / CN2010 / 07750

Type Approval



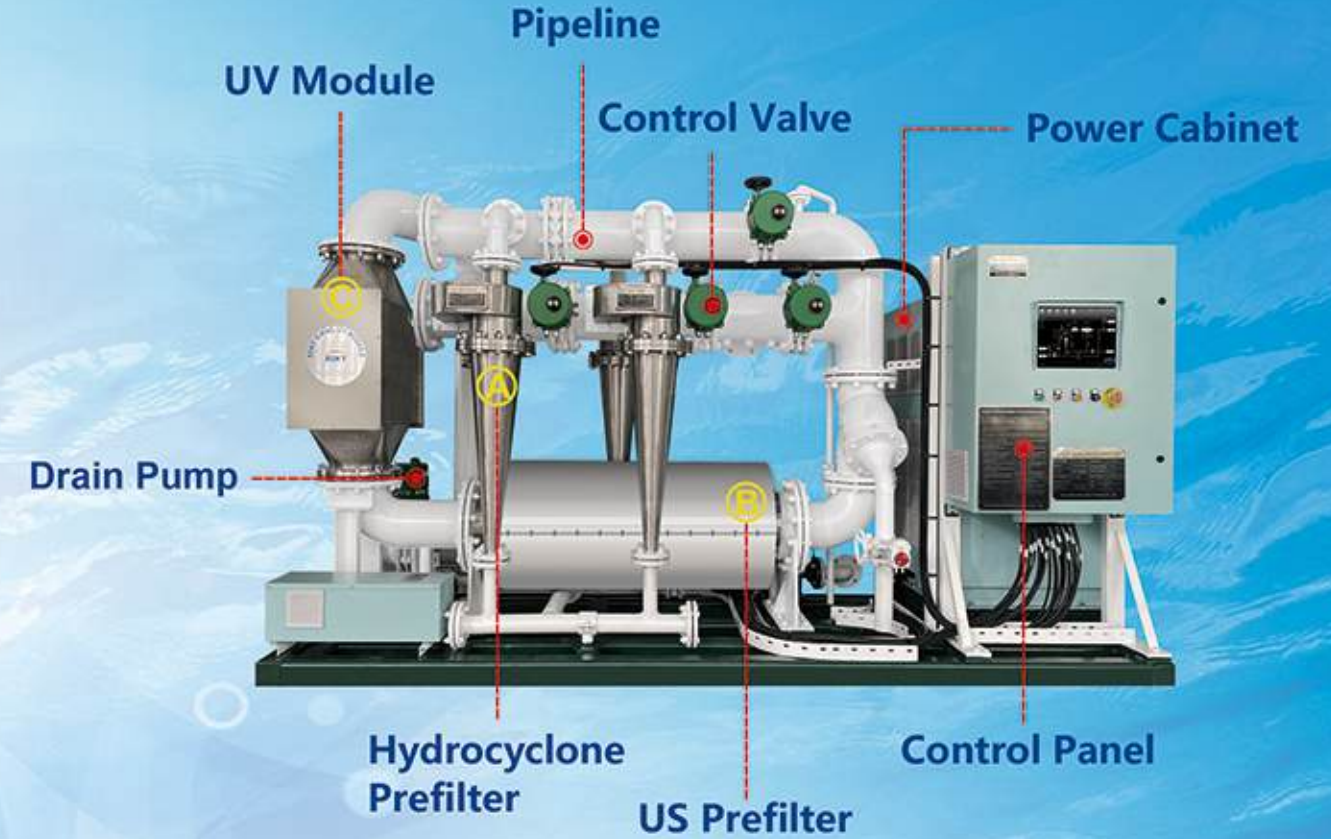
BSKY Enhanced Physical Technology (EPT)

The discharge of ship's ballast water has been identified as one of the major pollutions to the World Oceans. UV disinfection has been regarded as one of the most reliable and effective physical treatment technology for BWMS.

For treatment of ballast water, BSKY team developed enhanced physical technology (EPT), including Hydrocyclone separation + Ultrasonic sterilization + UV disinfection. The integrated system treats the ballast water effectively and rapidly during the loading and unloading process, and ensure the treated water meets the requirement from International Maritime Organization (IMO) and United States Coast Guard (USCG).

Features

- Enhanced Physical Technology (EPT): Hydrocyclone separation + Ultrasonic sterilization + UV disinfection;
- Hydrocyclone: Alternative of the traditional Mesh or Screen Filter without clogging issue or maintenance;
- UV: Auto controlled lamp power and flow rate according to water UV transmittance (UVT) for energy-efficient system,
- Flexible skid module or distributed installation to suit the actual space.



Core Modules



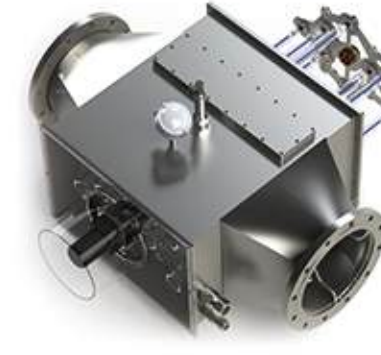
Hydrocyclone Prefilter

- 0 mesh, 0 noise
- No moving part
- No service time limit



Ultrasonic Prefilter

- Self-cleaning
- Particle degradation
- Cell wall breaking



UV Module

- Self-controlled UV dose
- Constant efficacy
- Energy saving

A Biggest Worry for Ship Owners — — Filter Clogging

Most BWM devices adopt filters with mesh size at 20-50µm, smaller than the diameter of human hair. Flocculent & filamentous microorganisms in the sea are very likely to get entangled in these meshes, together with the sediments sucked from the sea chest, lead to serious filter clogging.

20-50µm
Outer wedge-shape metal protective mesh
Middle metal protective mesh
20-50µm filter mesh
Inner metal protective mesh

The diameter of hair is 50-80µm

Stagnant water in the filter nourish the growth of marine lives, which are difficult to flush away.

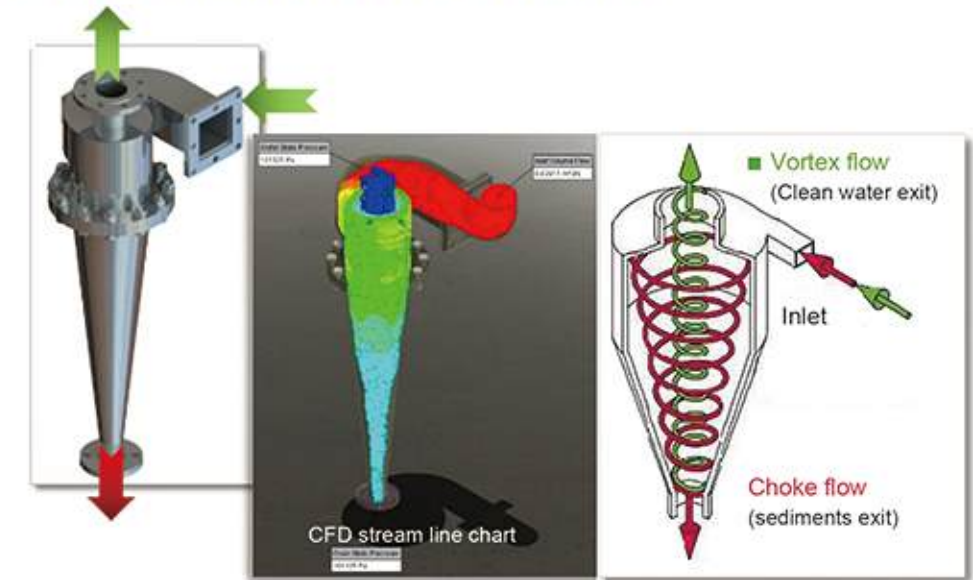
Before Cleaning After Cleaning

Flocculent & filamentous microorganisms are main clogging sources.

Manual clean after back flush fails

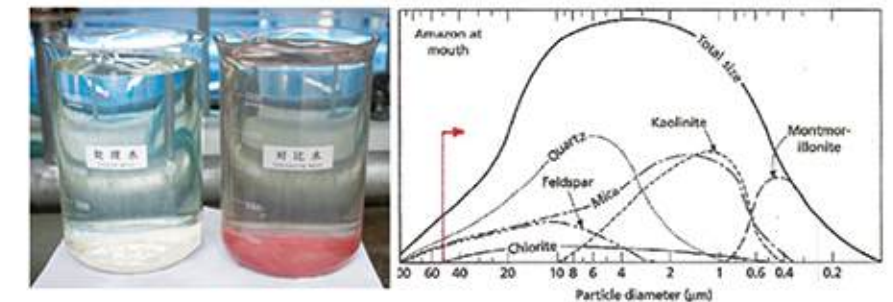
Hydrocyclone: Alternative of Traditional Mesh Filter

- No mesh
- Maintenance free
- Simple expansion
- Noiseless
- Duplex stainless steel
- Distributed installation
- No moving parts
- No service time limit
- Can be tilted for no more than 45 degrees to install



Filtration Effect

- 50 µm microbes and solid particles: 98%
- Microorganism & sediments between 20-50 µm: 95%
- Superstrong sediment filtration capacity



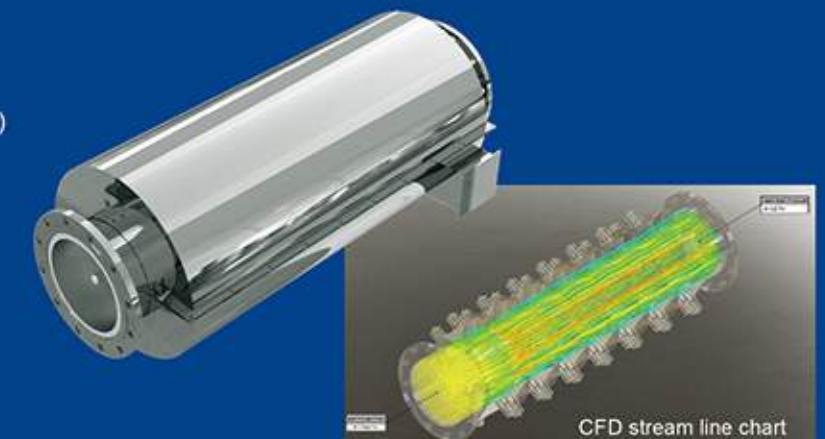
Ultrasonic Sterilization — — Best Companion with UV Disinfection

The ultrasonic cavitation can produce an instant temperature at 1900k-5200k and a pressure higher than 500atm. The temperature change during the process rates up to 109k/s, accompanied by strong shock waves and microjets at speed up to 110m/s. These extreme conditions play crucial roles to the degradation of organic pollutants in the water and even break their cell walls.



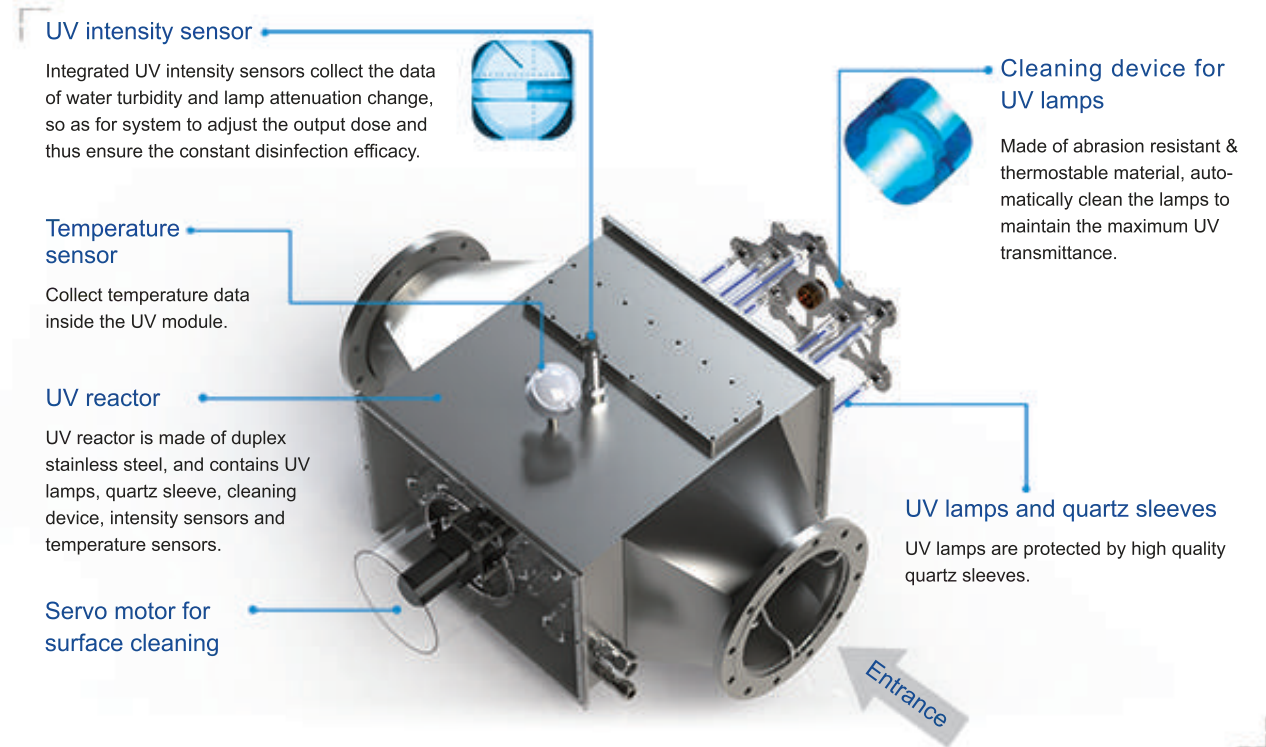
Features

- Physical process only (Approved by IMO)
- No corrosion to ballast tank
- Fast & efficient self-cleaning
- Maintenance free
- Low power consumption



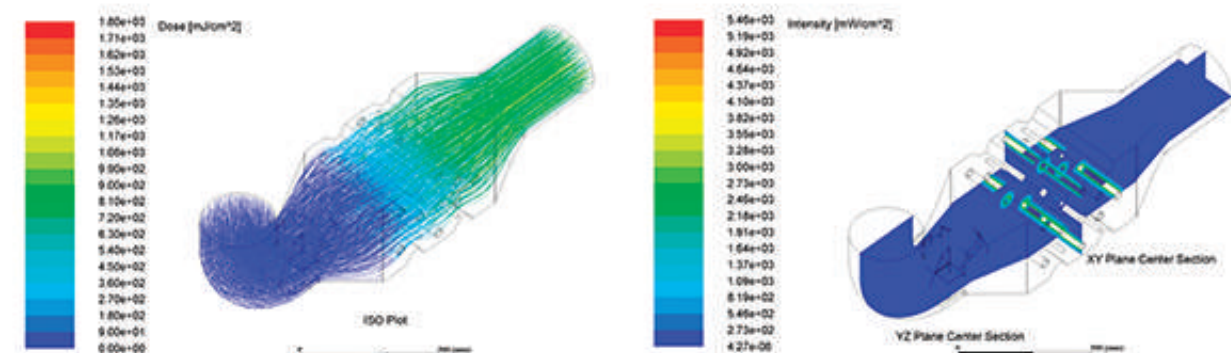
UV Disinfection — — Self-Controlled Dose for Lower Power Consumption

- Intelligent software with PID control and electric UV ballast controls UV intensity, dose and flow rate depend on UVT to achieve a high efficacy.
- Simple structure, wide spectrum range, and high intensity make medium voltage UV the best BWM conduct.
- Real time display of all the UV lamps' condition for: lamp #, output dose, operation time; together with alarms for maintenance.



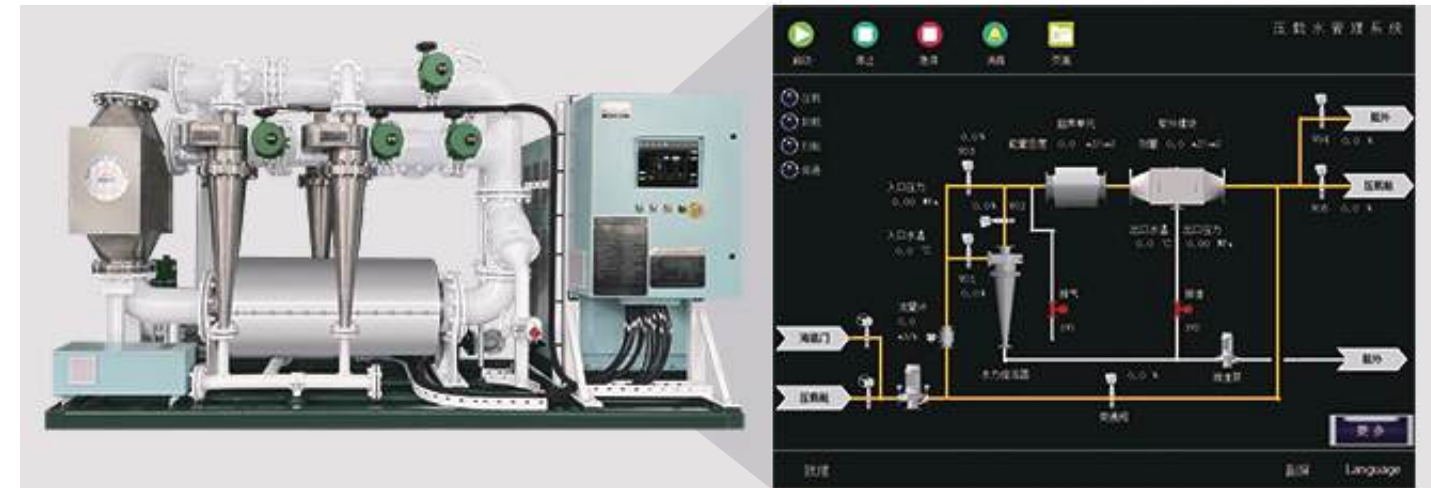
Advanced UV Reactor

Through CFD simulation which is carried out with particles and microorganisms at 50 um diameter, the new UV reactor obtains the RED (Reduction Equivalent Dose) value 1.45 times higher than the old model. Moreover, this reactor has passed USCG and IMO NEW G8 type test and successfully obtained the relative approvals.



Control Module

- One button start/stop
- Servo tracking
- Realtime monitor on UV lamps and cleaning devices
- Convenient operation on a color LCD touch screen
- Realtime display and alarm for maintenance
- 5 years' data storage



User Interface



BSKY_CON_R

BSKY_CON

US&UV Power Cabinet

* Remote control (Optional) at a chosen location

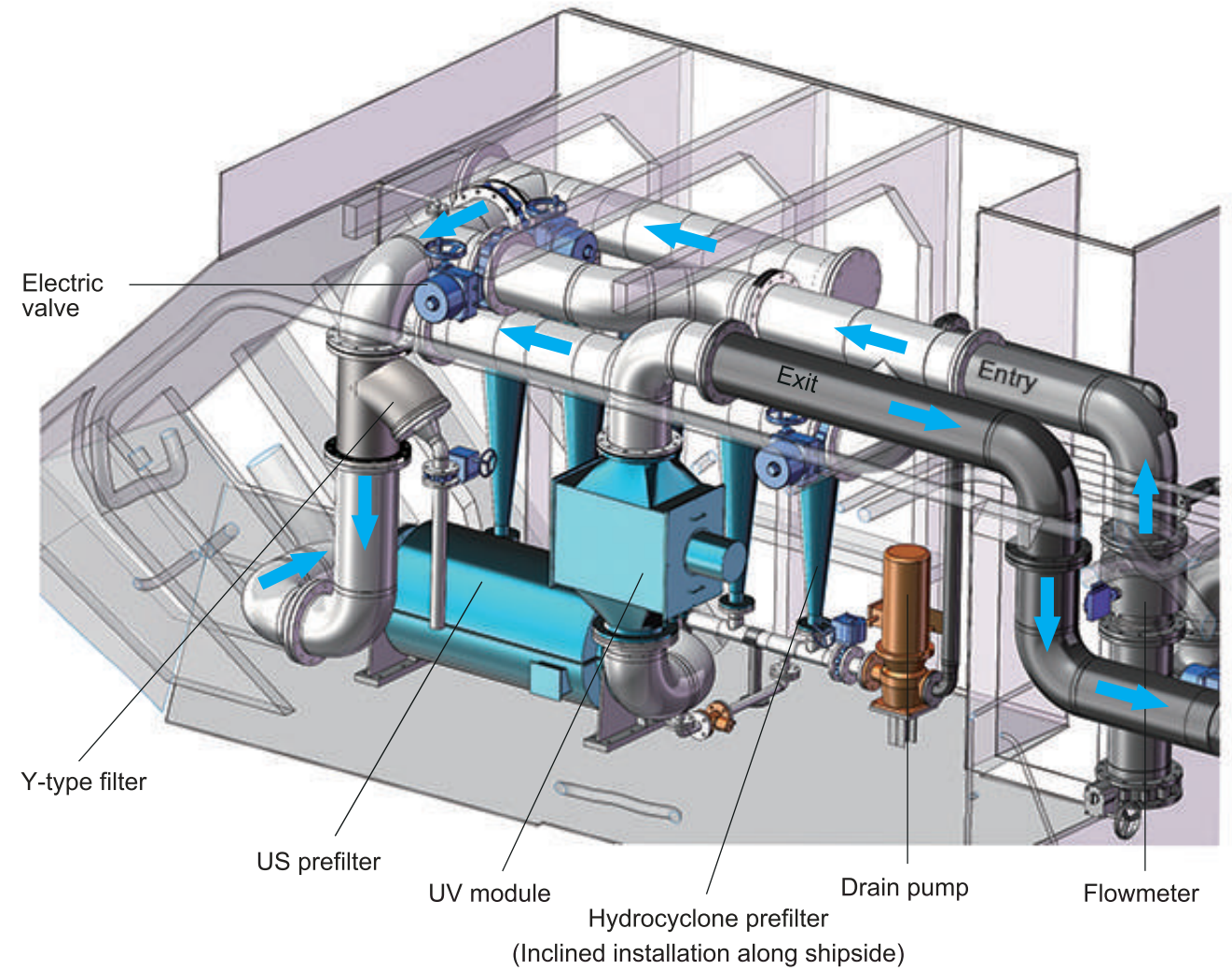
* US&UV Main control & power cabinet in

Flexible Installation Plan

BSKY provides flexible design and installation options: i.e. complete skid installation based on engine or pump room design, as well as distributed installation in void space according to actual situation space / 3rd party's design.




* The scale of components in the drawing is different from actuals.



Flow Rate [m³/hr]	80	130	160	200	240	260	300	300	300	390	400	400	480	520	560	600	600	780	800	900	900
CY Model	CY08	CY10	CY08	CY12	CY08	CY10	CY08	CY10	CY12	CY10	CY08	CY12	CY08	CY10	CY08	CY12	CY10	CY10	CY12	CY10	CY12
CY #	1	1	2	1	3	2	4	3	2	3	5	2	6	4	7	3	5	6	4	7	5
US Model	US25	US25	US25	US25	US25	US25	US25	US25	US25	US35	US35	US35	US35	US35	US35	US35	US35	US45	US45	US45	US45
UV Model	UV408	UV408	UV408	UV408	UV408	UV408	UV408	UV408	UV408	UV514	UV514	UV514	UV514	UV514	UV514	UV514	UV514	UV520	UV520	UV520	UV520

Flow Rate [m³/hr]	1000	1040	1170	1200	1200	1300	1400	1430	1500	1500
CY Model	CY12	CY10	CY10	CY12	CY10	CY10	CY12	CY10	CY10	CY12
CY #	5	8	9	6	10	10	7	11	12	8
US Model	US50	US50	US50	US50	US50	US55	US55	US55	US55	US55
UV Model	UV626	UV626	UV626	UV626	UV626	UV632	UV632	UV632	UV632	UV632



Specifications

More information is subject to type approvals from different classification society. By scientific combination & distribution of standard models, the rated maximum capacity can reach up to 6000m³/h.



Our Projects

Our Services

Communication

- Vessel info
- Configurations
- Space examination
- Onboard inspection
- Technical agreement

Analysis

- Agenda
- Cost

Project Design

- Drawing approval
- By Class/owner/shipyard
- Detailed drawing
- Process drawing

Manufacture

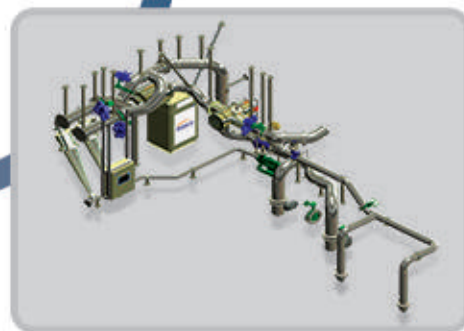
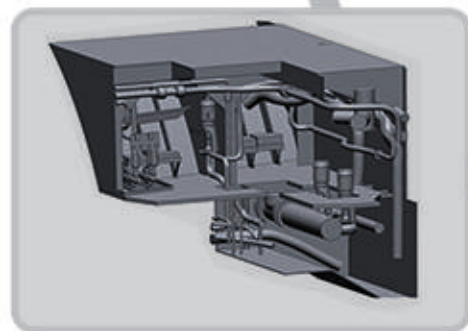
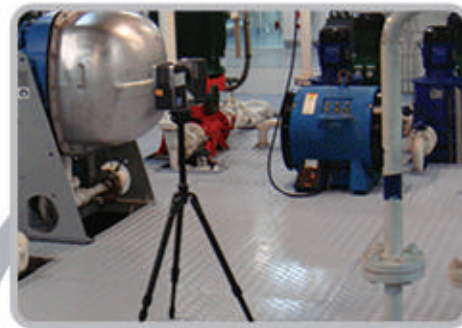
- Production plan
- Material preparation
- BWMS production
- Internal acceptance
- Delivery

Installation

- Dry-docking
- Modify ballast pipelines
- BWMS installation
- Commissioning
- Onboard acceptance

Aftersales

- Training
- Regular visiting
- Maintenance service



3D scanning improves the accuracy of part allocation and pipe pre-fitting, and hence save the installation time and material cost.



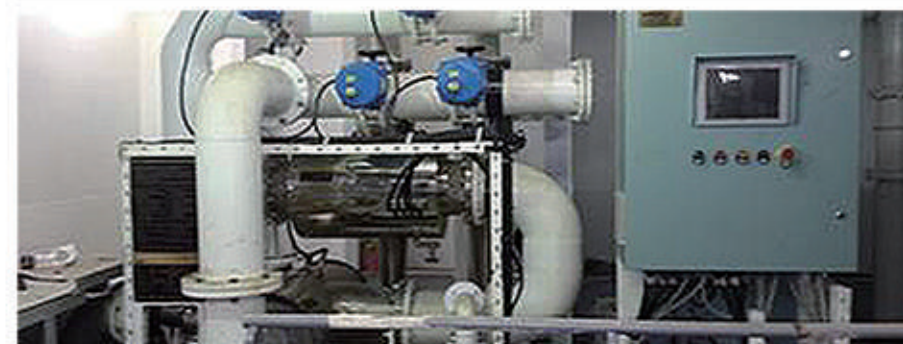
Ship Owner □ China | Ship Type □ 13K Chemical Tanker
 Pump Capacity □ 350m³ / h x 2 | Model □ BSKY 700EX x 1 set Skid Type
 Class □ BV



Ship Owner □ Germany (CP Offen) | Ship Type □ 4100TEU Container
 Pump Capacity □ 500m³ / h x 2 | Model □ BSKY500 x 1 set Skid Type
 Class □ GL



Ship Owner □ Japan (Centro Shipping) | Ship Type □ Cement Carrier
 Pump Capacity □ 300m³ / h x 2 | Model □ CY600 x 1 set Distributed Type
 Class □ NK



Ship Owner □ Greece (Benelux) | Ship Type □ 9K LEG Carrier
 Pump Capacity □ 150m³ / h x 2 | Model □ BSKY250 x 1 set Skid Type
 Class □ CCS / LR



Ship Owner □ Japan (MOL) | Ship Type □ Tanker
 Pump Capacity □ 750m³ / h x 2
 Model □ BSKY1500 x 1 set Distributed Type | Class □ NK



Ship Owner □ Germany (Peter Dohle) | Ship Type □ 38K BC
 Pump Capacity □ 700m³ / h x 2 | Model □ BSKY 700 x 2 Skid Type
 Class □ LR



Ship Owner □ Japa (Toko Kaiun)L | Ship Type □ Tanker
 Pump Capacity □ 150m³ / h x 1 | Model □ BSKY 150 x 1 set Skid Type
 Class □ CCS / LR

Global Service



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