



TOP Machinery

— ETP, STP, WT, RAS Equipment Expert



Top Industry (Chengdu) Co., Ltd
Top Machinery (Chengdu) Co.,Ltd
Top Environment Machinery (Chengdu) Co., Ltd

Brief Introduction

Top, founded in 2002, is a professional manufacturer and supplier of environmental protection and RAS equipment. Our products include micro-nano technology equipment, volute screw sludge dewatering machine, DAF, intergrated wastewater treatment equipment, sludge scraper, mechanical screen, hydrocyclone, self-cleaning filter, inward/outward water micro filter, dosing device, sand filter, softener, RAS equipment and other equipment. The products have been sold to more than 40 countries, widely used in municipal and industrial sewage, such as textile and dyeing, tannery, paper&pulp, food processing, slaughterhouse, animal husbandry, pharmaceutical, pastic recovery, petrochemical, etc.



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Technical Team



With the introduction of advanced technology concepts at home and abroad, supported by the laboratory of Sichuan University(**China's Top 10**), we are a professional solution team integrating technology research & development and technical consultation.



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Overseas Sales Network



Overseas office:

Pakistan office and after service

Indian office and after service

Cannada office and after service

Vietanam office and after service

Iran office and after service

Brazil office and after service

Romania office and after service

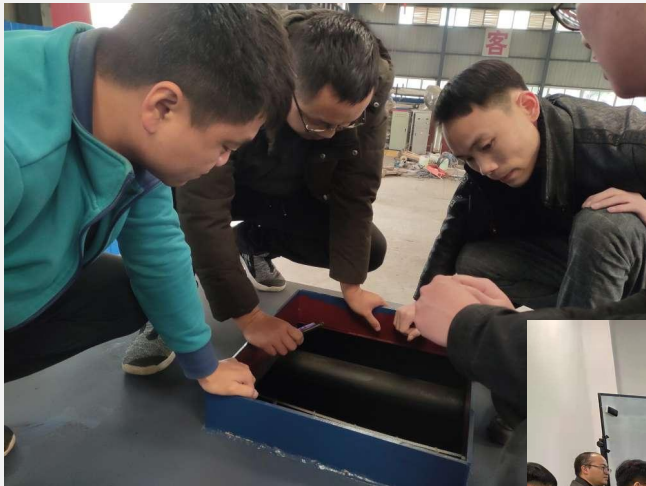
With our consistent effort, by virtue of excellent quality, competitive price and good after-sales service, our products are very popular and supplied to more than 30 countries.



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Clients Visit



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Clients Visit



TOP meet customers from all over the world every year, or be invited to visit customers. Engineers know the specific conditions on site and provide the most appropriate solutions for customers. Customers are satisfied with our service and product quality, and place orders.



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Delivery



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Certificates

**Quality Management System
Certificate of Approval**
This is to certify that the QMS of

Top Machinery (Chengdu) Co., Ltd.
Unified Social Credit Code:915101056446590334

Registration Address: 2D-K, No.360, Tianhui Road, High-tech Zone, Chengdu City, Sichuan Province, China
Production Address: No.146, Kanggang 2nd Road, Shuangliu Xianggang Economic Development Zone, Chengdu City, Sichuan Province, China

Has been assessed and found to meet the requirements of
GB/T 19001-2016/ISO 9001:2015
This certificate is valid for the following scope of operations:

Production of Solid-liquid Separation Equipment, Wire Rope Products

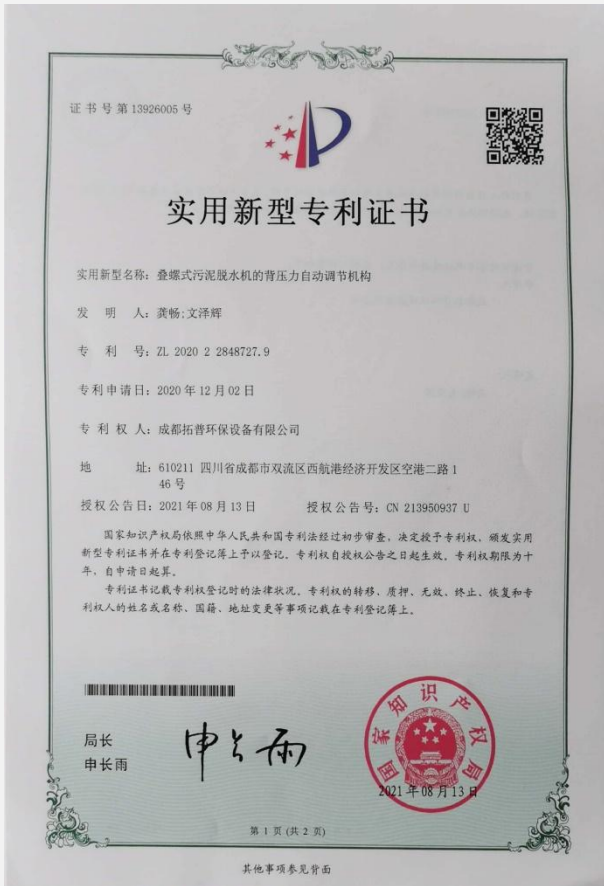
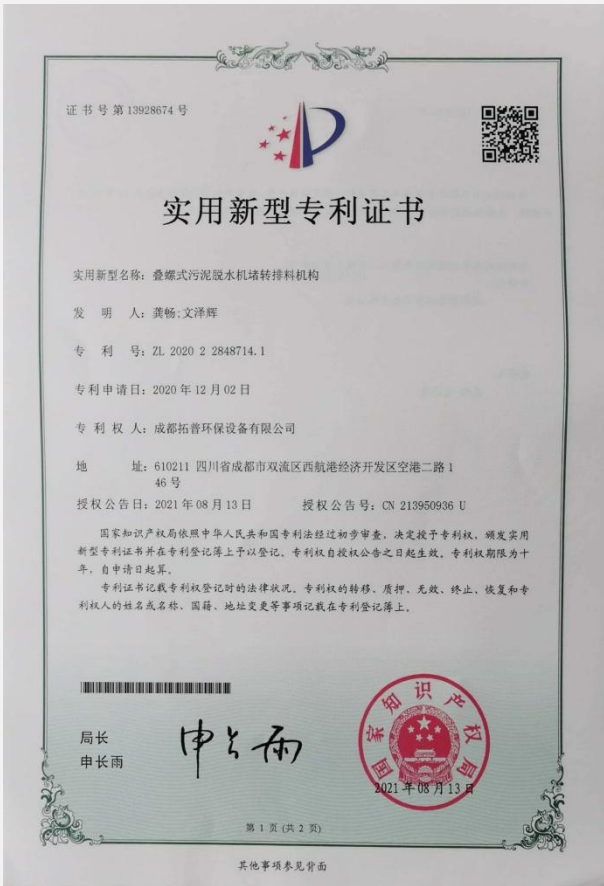
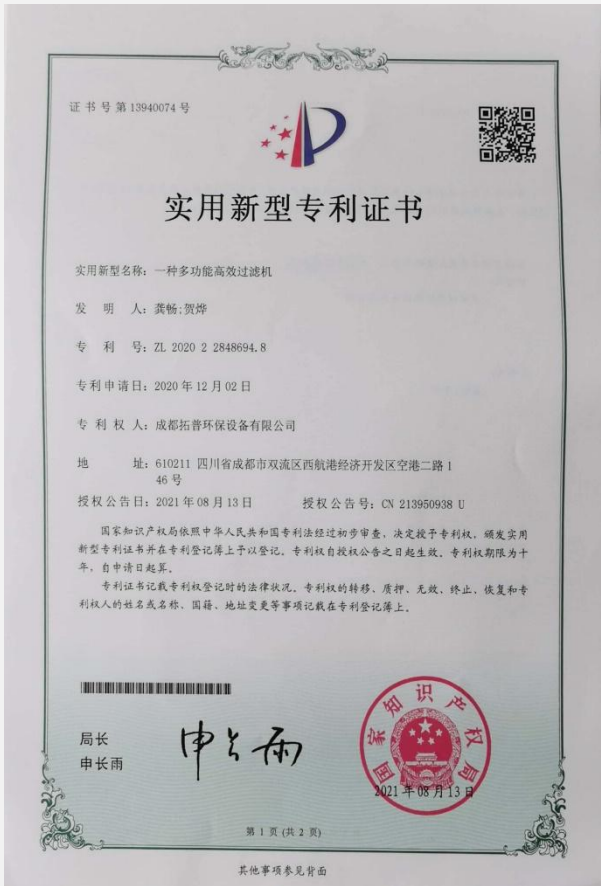
Date of Certificate Issue: Jan. 22, 2019
Certificate Valid Until: Jan. 21, 2022
Certificate Number: QM171901119

The validity of the registration will be continued only when the organization pass the annual surveillance audit.
Check the validity of certificate at www.cnca.gov.cn or www.das-china.com
Surveillance Audit:

Authorized by: Chief Executive

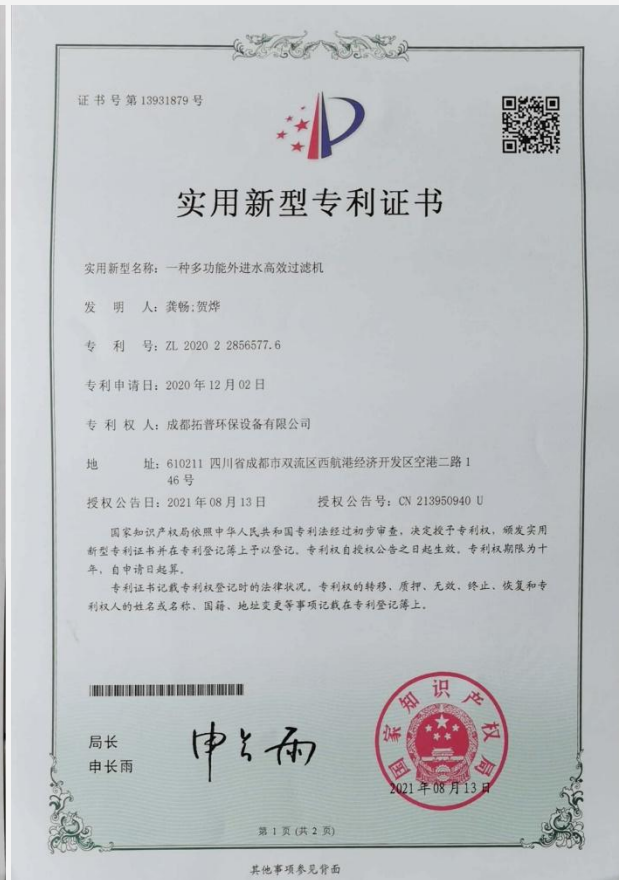
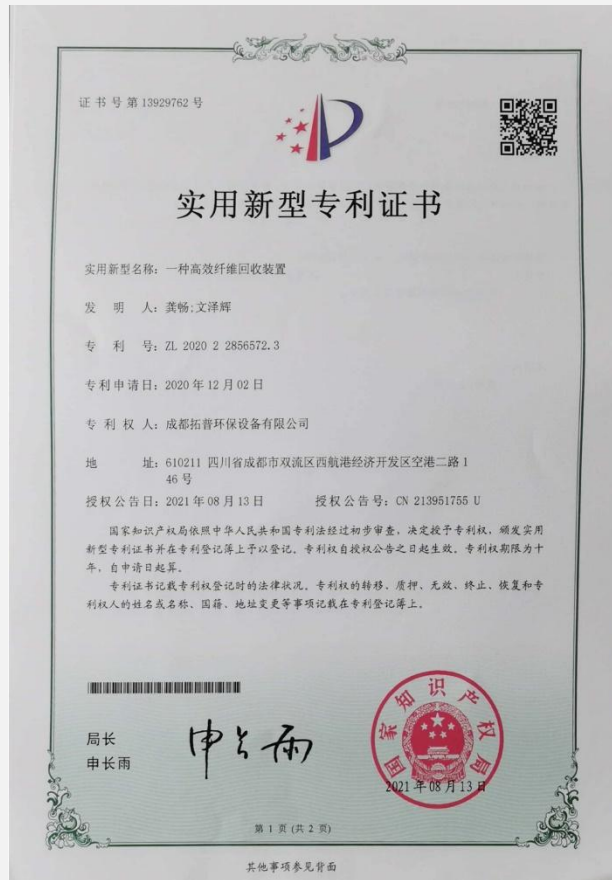
Shanghai DAS Certification Co., Ltd., member of SN Registrars(Holdings) Ltd.
407100, Yuexi 2, Guozhen Garden No. 488, Zhongyuan Road, Shanghai, P.R. China, 200002
Tel: 0204-21 6277202 Fax: 0204-21 6286229
Web: <http://www.das-china.com>
Email: info@das-china.com
UK Head Office: DAS Certification Limited (in behalf of SN Registrars (Holdings) Limited)
42nd Registration House, 225 Strand Street, Bournemouth, Dorset, Hampshire, BH2 2PS, UK
Tel: +44 (0)1202 803299
Email: info@dascertification.co.uk
Web: www.dascertification.co.uk
Company Number: 07633867

Certificates



Top have certified to many professional patents.

Certificates



Cases



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Nano bubble technology

Nano bubble device is a new technology water treatment equipment independently developed by TOP Machinery(Chengdu) by using the synergetic effect of “super dissolved air release technology” and “nano dispersion technology”, water and air are highly mixed, and high density and uniform micro nano bubbles are released.

The air is initially compressed into a large number of 0.25 mm bubbles, and then the release system is used to produce micro bubbles and nano bubbles with a diameter of less than 3 μ m, which are released into the water to form a milk white air-liquid mixture, so as to achieve the effect of rapid oxygenation.

The high-density bubbles released by the equipment surround the pollutants, which can effectively reduce SS, then they eventually break and dissolve in water, and effectively degrade COD.

Micro nano bubbles can provide dissolved oxygen to water, inhibit the increase of sediment, digest the sludge in stock, and create a good sediment environment. It can increase oxygen efficiently, remove algae effectively, digest sediment, and circulate the living water.

It is widely used in municipal (such as river and lake treatment, municipal engineering, sand and gravel field), enterprise (paper fiber recovery, precious metal recovery, food factory, distillery wastewater treatment), agriculture (vegetable, rice planting, fish breeding), etc.



Before

After



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Application of nano bubble technology -TPNF Nano flotation integrated machine

TPNF Nano integrated machine is a new technology wastewater treatment equipment independently developed by TOP Machinery (Chengdu). The latest international Nano bubble technology and TOP special filtration system are adopted to remove SS, grease and other substances, reduce COD and BOD, and lessen the burden of subsequent treatment. **After** nano technology treatment, the clean water is filtered through a special structure filter element to achieve ultra clean water. This technology has great innovation, especially in the field of recycling useful substances in wastewater, such as papermaking fiber and metal ore. It can also be used in industrial wastewater treatment engineering, such as food factory, distillery, petrochemical industry, textile, printing and dyeing, electroplating, tanning industry and so on.



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TPNF Nano flotation integrated machine-Characteristics

- Greatly reduce SS and COD, which greatly solves the burden of subsequent processes
- For common process, a large number of civil engineering is needed, such as biochemical tank, which needs to occupy a lot of civil engineering cost. The new product can greatly reduce the civil engineering cost.
- It adopts the integrated overall design, compact design, simple operation, high degree of automation, light and simple maintenance and short maintenance time.
- The filter system adopts patented technology, special structure. The filter element is made of stainless steel, which has stronger filtering capacity, less blocking, easy cleaning and longer service life. It greatly improves the filtering recovery/separation effect, increases the working efficiency and greatly improves the working efficiency.
- Low operating costs.
- It has high safety factor and can be equipped with cover shell; it can avoid people / animals / sundries from entering the equipment.
- Continuous effluent, fiber recovery rate/SS can reach more than 95% in the paper industry, the filtered effluent can meet the reuse standards of the paper mill, and the ultra clean water can reach less than 20mg/L, which greatly reduces the burden of the follow-up process.
- The solid content of output scum can reach more than 5%, greatly reducing the subsequent treatment workload; which can be integrated with screw press to directly deal with scum.

As mentioned above, it not only greatly overcomes the problems of outlet poor water quality and the releaser blocking of traditional air flotation, but also greatly improves the working efficiency, outlet water quality, water recycling effect, economic benefits, safety factor, and reduces the operation and construction costs.



Case-TPNF Nano air flotation- Papermaking



Raw water

Fiber recycling

Outlet

Sample	SS (mg/l)	COD (mg/l)
White water	169	1057
First stage 1	23	102
First stage 2	20	127
Second stage 1	16	125
Second stage 2	17	110

Outlet SS<30mg/L



Case-TPNF Nano air flotation - Distillery



A screenshot of a spreadsheet application. The spreadsheet has columns A through J and rows 1 through 23. The data in the first four rows is as follows:

A	B	C	D	E	F	G	H	I	J
1	25450								
2	11321								
3	15160								
4	52210								

Overlaid on the spreadsheet is a photograph of four plastic bottles of water samples. The bottles are labeled with handwritten numbers: 1, 2, 3, and 4. The water in the bottles shows a color gradient from light yellow to dark brown. The spreadsheet interface includes menu options like '格式刷', '剪贴板', '字体', '对齐方式', '数字', and '样式'.

Reduce COD from 50,000mg/L to 10,000mg/L



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Application of Nano bubble technology -Municipal - River and Lake Treatment

Function and principle

TPNF Nano bubble generator is composed of water pump, micro nano bubble water generator, pressure gauge, releaser and some pipe fittings. It is a set of dissolved oxygen repair equipment specially developed for river treatment.

The core technology of the system is to use nano dispersion technology to compress a large amount of air into a large number of 0.25mm diameter non-pressure microbubbles, and then use the release system to disperse the 0.25mm diameter non-pressure microbubbles through the air and liquid in the vacuum, and produce micron bubbles and nano bubbles with diameter less than 3 μ m, which are collectively referred to as micro and nano bubbles, and are released to the water to achieve the goal of rapid oxygenation in the water.

Micro nano bubbles has a long survival time, can be maintained in water for as long as 72hrs, has a large specific surface area, high interfacial activity, charging, with energy and other special physical and chemical characteristics. It has a large contact area with water and a very high dissolved oxygen content. The system releases a large number of micro and nano bubbles into every corner of the water through the release system at a set depth, and the oxygen utilization can reach more than 50%-80%. Compared with the best release device in China, the power consumption can be reduced to 1/5. Compared with the traditional equipment, the efficiency is much higher and the energy saving effect is obvious. When the micro nano bubble generator supplies micro nano bubbles in anoxic water area, with the consumption of dissolved oxygen in the bubble, the active oxygen is continuously added to the water, and the oxygen content in the water is increased rapidly. At the same time, various organic particles in the water are rapidly decomposed into smaller particles, which is conducive to further biochemical decomposition and greatly reduce the sludge sedimentation. At the same time, micro and nano bubbles can greatly improve the oxygen supply, enhance the biological activities of aerobic microorganisms, plankton and aquatic animals, accelerate the biodegradation process of pollutants in sediments, and achieve the purpose of water purification.



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Technical features

Technical features are as following:

- (1) A large amount of strong oxidizing free radical $\cdot\text{OH}$ is produced to oxidize organic pollutants and form the final products CO_2 and H_2O ;
- (2) The pollutants of macromolecular structure degrade&destruct (ring opening) to small molecular structure which is easier to be ingested and utilized by indigenous microorganisms, to improve the efficiency of biochemical degradation;
- (3) The efficiency of phosphorus and nitrogen removal is high, the removal rate of ammonia nitrogen is 85%, and the total phosphorus is reduced by 65%;
- (4) Improve dissolved oxygen, transparency, promote ecosystem self-healing, improve water self purification capacity;
- (5) Reducing water cluster association complex and activating water;
- (6) Activate "indigenous microorganism" and improve the efficiency of biochemical degradation;
- (7) It can quickly inhibit and eliminate cyanobacteria by reducing the content of nitrogen, phosphorus and other nutrients;
- (8) It can degrade the fluid mud, promote the surface mineralization of sediment and inhibit the sediment to release pollutants to the water.



Application of Nano bubble technology - Precious metal recovery

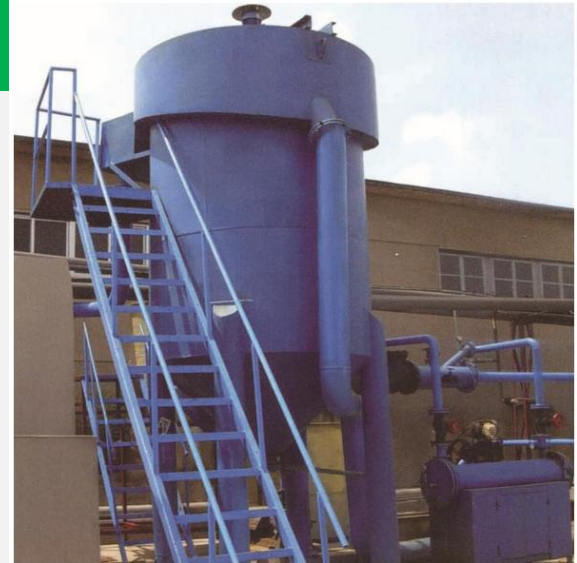
Precious metal minerals mainly include gold ore, silver ore and platinum group (platinum, ruthenium, rhodium, palladium, osmium, iridium) minerals. There are only a small amount of precious metals in the crust and because of their good stability and ductility, they are very important and have a wide range of applications in electronic technology, aerospace materials, atomic energy, chemical materials, precision instruments, photographic materials and other fields. Therefore, the flotation of precious metal minerals is very important for the development of human beings.

In flotation equipment, nano bubbles are attached to the surface of the mineral to be recovered, which makes the minerals float up and then be separated.

The technology mainly recovers precious metals from overflow liquid of sedimentation devices such as settling tank, purifier or pond. But it has been proved challenging due to the small size of the particles. The particle size distribution in the overflow liquid is usually P80 less than $40\mu\text{m}$, preferably P80 less than $10\mu\text{m}$. Now, the flotation applications using nano technology to generate micro nano bubbles have shown that suspended solids can be removed and the efficiency is more than 70%.

The size of micro nano bubbles is usually less than $1\mu\text{m}$, and microbubbles are usually between $1-1000\mu\text{m}$. In ordinary flotation, the bubbles are between $600-2500\mu\text{m}$. Smaller bubbles can be used to remove the finer particles that escape from the traditional flotation process. Therefore, the technology is based on the use of micro bubble and/or nano bubble flotation in the recovery of at least one precious metal. In this application, the bubble size is between $0.5-250\mu\text{m}$, preferably between $5-200\mu\text{m}$.

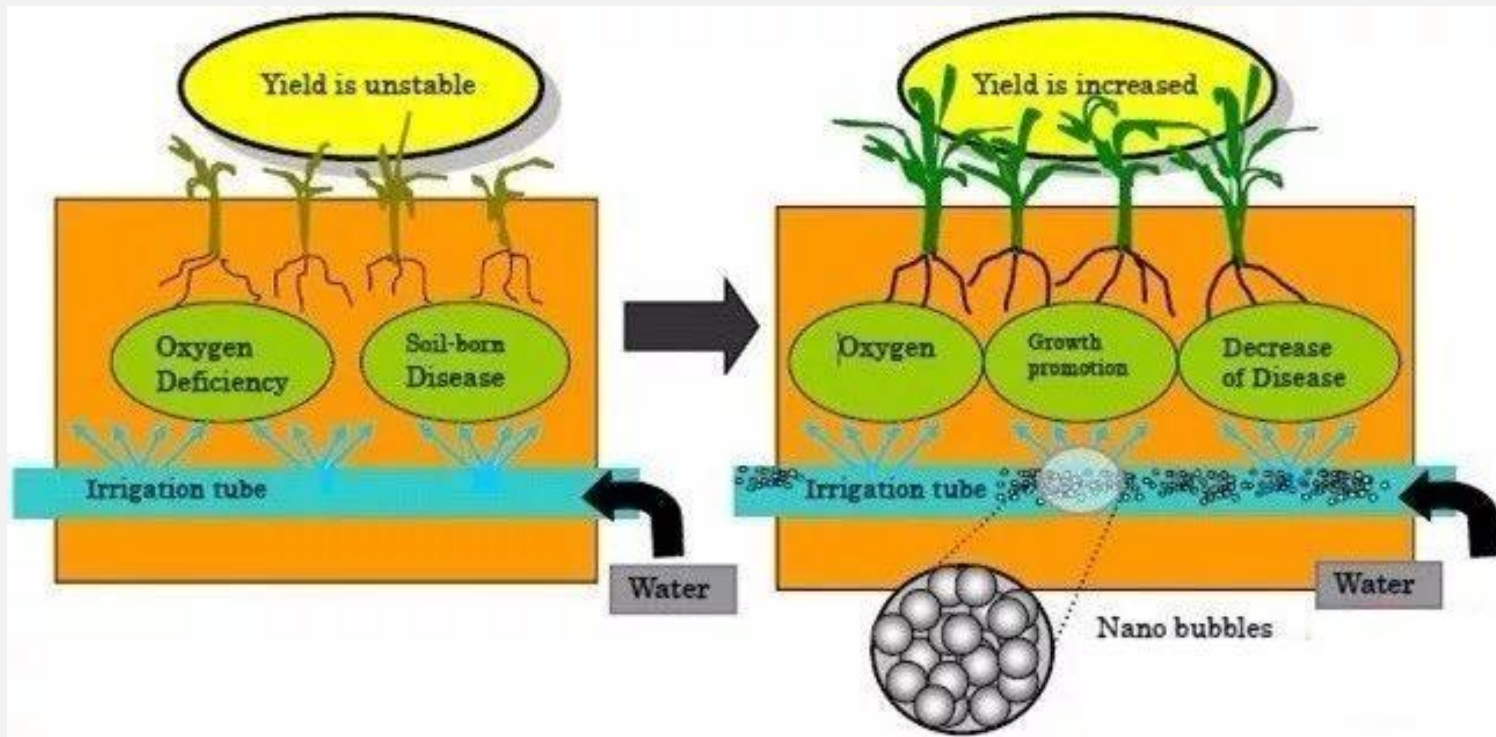
The advantage of this technology is that precious metals such as gold&silver can be effectively recovered instead of being thrown directly into the trash.



Application of Nano bubble technology - Agriculture - Rice

Aerobic Irrigation

Add air to the irrigation water, directly deliver oxygen to the crops roots thus optimized zone air environment of the root and promote the growth of the crops. It's a new and high-efficiency water-saving irrigation technology which is extremely water-saving, energy-saving and environmentally friendly to increase crop production.



Advantage:

- Improve root distribution, expand root volume, enhance root vitality and water use efficiency;
- Promote fertilizer absorption, organic matter decomposition and nutrient utilization, improve water and fertilizer utilization efficiency;
- Promote crop growth, increase yield and quality;
- Improve soil condition and increase land productivity;
- Reduce irrigation, drainage and water consumption, improve rainfall utilization and irrigation water utilization, thereby effectively reducing nitrogen and phosphorus surface runoff emissions.



Application of Nano bubble technology -Agriculture-Hydroponics Flower



Promote root and leaf development

Oxygen-enriched bottling treatment enhances the root function of the late growth stage to improve leaf superoxide dismutase activity, reduce leaf malondialdehyde content, delay leaf senescence, prolongs the functional period of the leaf

Traditional planting
poor root function

Nano aerated planting
Well-developed root system and better absorption rate

In the process of hydroponic plant production, the amount of dissolved oxygen in water is an important factor that affects plant growth. If the dissolved oxygen is sufficient, the growth will be fast. The micro-nano bubbles can increase the dissolved oxygen in the water and promote plant growth. It's a new technology in ecological agriculture technology. In gardening and dry land drip irrigation, widely employ methods such as air pump oxygenation to increase the dissolved oxygen in the water, but the traditional oxygenation method is relatively inefficient. The use of micro-nano bubble rapid generation devices to aerate the irrigation water and can make the dissolved oxygen value quickly reaches a super-saturated state, forming micro-nano bubble water for irrigation. Micro-nano bubble water can not only provide sufficient oxygen, but also its unique charging, oxidizing, and bactericidal properties make it have special biological and physiological activities and promote the growth of plants.

Cost Reduction

Ultra-fine bubbles are mixed with pesticides and nutrients more carefully, with high utilization rate, uniformity, and high survival rate.

Normal mixing is not uniform and the usage rate is not high

Nano-bubbles are more uniformly mixed, and the usage rate is higher

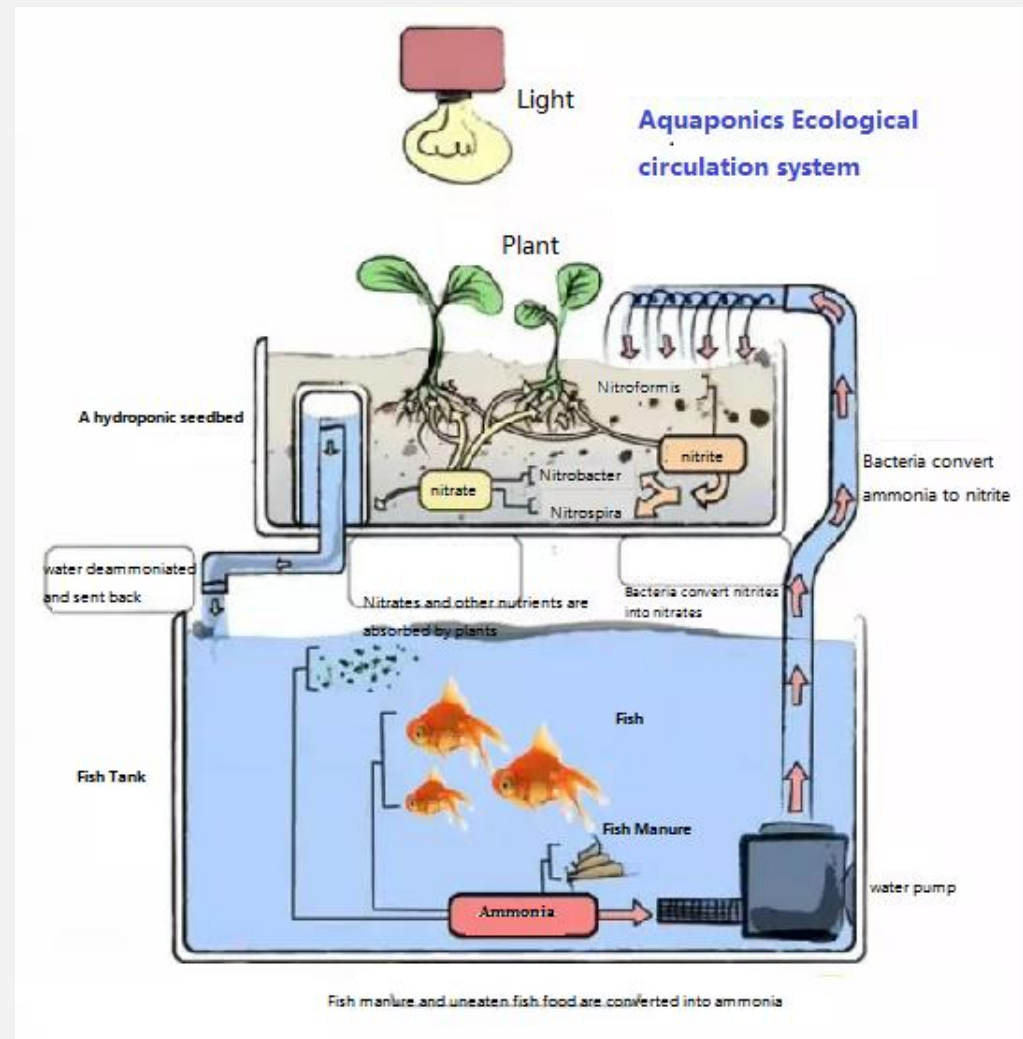


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Application of Nano bubble technology - Agriculture - Aquaponics

Principle

Fish and vegetable symbiosis, as a circular ecological planting method that combines aquaculture and soilless culture technology. Use fish manure to grow vegetables, and power to drive the water body to close the cycle: the fecal organic matter excreted by the fish after eating, the microorganisms are responsible for decomposing fish feces, providing nutrients, transporting them to the plant roots through the circulatory system, and absorbing nutrients and purifying the water. The remaining roots are eaten by fish. The whole system can achieve: water recycling, organic waste recycling.



Application - Agriculture - Aquaponics



Features:

To achieve a harmonious ecological balance between animals, plants, and microorganisms is a low-carbon production model of sustainable recycling and zero emission in the future, and it is the most effective way to effectively solve the agricultural ecological crisis.

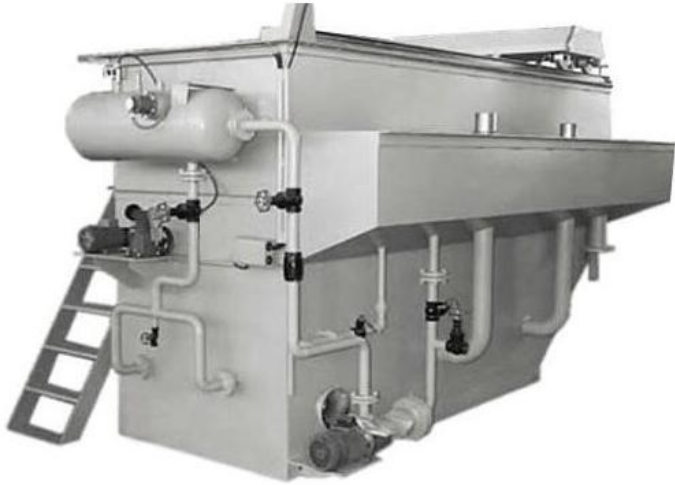
The Aquaponics technology has simple principles and strong practical operability. It can be suitable for large-scale agricultural production, and can also be used for small-scale family farms or urban hobby agriculture, and has broad application prospects. It is a farming mode that is very suitable for urban or rural courtyard production, and it is also the main technology and trend of urban agriculture development in the future.

Creatively combine the micron nano technology with the fish-vegetable circulation system. Through the micro-nano bubble water generating device, the air (such as air, oxygen, ozone, etc.) is dissolved into the water by a high-speed rotary cutting method to quickly and efficiently prepare micro nano-bubble water and improve the dissolution efficiency of air in water and provides sufficient oxygen for fish. At the same time, the micro-nano bubble water is transported to plant roots through the circulation system, which effectively increases the oxygen content of plant roots and promotes plant growth.



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Pretreatment - TPZF Combined Air Flotation Machine



TPZF Combined Air Flotation Machine

Consists of air floatation tank, dissolved air system, dissolved air return pipeline, dissolved air water release device, scraping device (combined, driving and chain plate according to user needs) and electric control cabinet. Air flotation is one of the most effective methods for the removal of tiny suspended particles with a specific gravity close to that of water.

Advantages:

- Small footprint, power saving, easy to operate
- Integrated control of machine, electricity and instrument
- Superior anti-blocking ability
- High efficiency of air production
- Smooth and reliable operation, high scraping efficiency



Pretreatment - TPQF High-efficiency Shallow Air Flotation



TPQF High-efficiency Shallow Air Flotation

An advanced fast air flotation system. Based on the traditional air flotation theory, it successfully uses the "shallow theory" and "zero speed principle". It integrates flocculation, air flotation, slag and sludge skimmer, and is an efficient equipment for water purification.

Advantages:

Short hydraulic retention time

Large purification

Small footprint, easy transport

Smooth and reliable operation



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Sludge dewatering- TPDL Volute screw sludge dewatering machine



TPDL Volute screw press sludge dewatering machine

Volute screw press sludge dewatering machine is a new type of solid-liquid separation equipment, which uses the screw extrusion principle, through the strong extrusion force generated by the change of screw diameter and pitch, as well as the tiny gap between the moving ring and the fixed ring, to realize the extrusion dewatering of sludge.

Advantages

Not easy to block

Continuous automatic operation without manual intervention

Integrated design saves operation cost

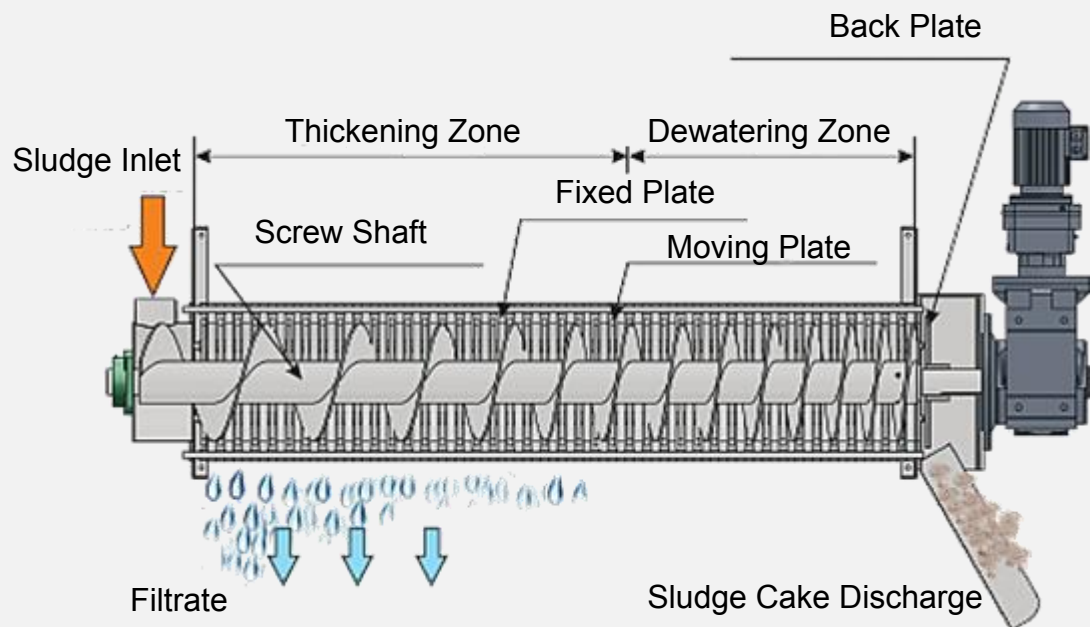
No secondary pollution

Stainless steel material, durable



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Working Principle of TPDL Volute Screw Sludge Dewatering machine



Advantages:

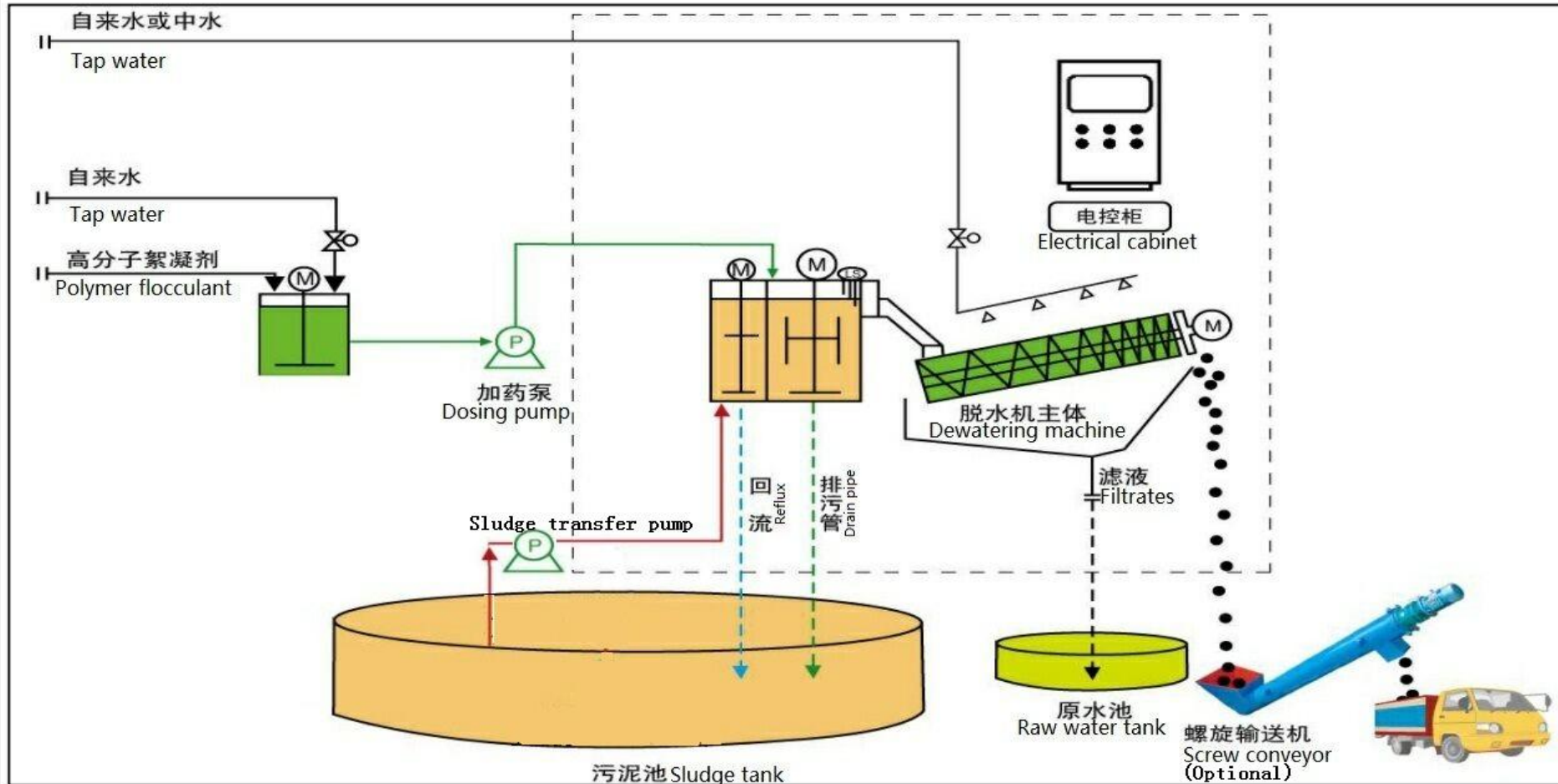
1. Low operation cost: below 40% of belt press and 20% of centrifuge.
2. Power-saving: less than 5% of centrifuge
3. Water-saving: less than 0.1% of belt filter press.
4. Flocculant agent-saving: saving around 60%.
5. Compact: saving more than 60% of the investment for dehydration room.
6. Non-clogging: processing the fats & oils and fiber sludge perfectly.

Application: municipal sewage, petro-refining, leather making, dye printing & paper making, coalification dressing, biochemical pharmacy, steel picking and chemical sugar, food processing etc.



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Sludge Dewatering Process



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Polymer dosing-TPAD Auto dosing device

TPAD Auto dosing device



It is also called three chamber dosing device, which is composed of three chamber box, dry powder dosing system, solution mixing system, control system and liquid dosing system. The device is an automatic and continuous preparation and dosing system of powdery polymer flocculant. The dry powder flocculant enters the instant dissolver from the screw propeller for premixing with clean water, the wetted material enters the preparation tank for mixing and dilution, and is prepared according to the required concentration.

If it is a liquid flocculant, it is directly added to the preparation tank by screw pump. In the preparation process, the water inflow must be relatively stable under the observation of flowmeter, so as to ensure the concentration of the prepared solution remains unchanged in the whole working process.

Advantages

- Integrate automatic batching, dissolution, dosing in one, automatic operation
- The quantitative dosing device has the advantages of accurate measurement, stepless transmission drive, convenient adjustment of feeding amount and wide concentration range.
- With liquid level detection, flow control, auxiliary vibration feeding and other functions, high degree of automation.



Sludge Scraper-TPZXG Central Drive Sludge Scraper

TPZXG Central Drive Sludge Scraper

The load of the whole scraper acts on the center of the working bridge. The scraper is driven by the central driving mechanism. The directional scraper scrapes the sludge from the bottom of the sedimentation tank into the central sludge collecting tank and discharges it from the sludge tank by hydrostatic pressure. It is widely used in sedimentation tank and concentration tank.



Advantages

1. The driving device is driven by reduction drive mechanism, which is compact structure and high mechanical efficiency.
2. Scraping sludge from the tank bottom; the oblique pattern scrapers has good continuity and high efficiency of collecting sludge; the rubber scraper is installed under the stainless steel scraper to ensure that the scraping is thoroughly clean and there is no floating sludge.
3. Electrical and mechanical overload protection is adopted in the transmission part, which makes the operation safer and more reliable.
4. The underwater part is made of stainless steel which is corrosion resistance and long service life.





TPPGS Mechanical Bar Screen

A device that can continuously and automatically remove various impurities in fluids for solid-liquid separation. It is the most advanced solid-liquid separation equipment in China.

Advantages:

High degree of automation

Periodic operation availability

High separation efficiency

Low power consumption, no noise

Good corrosion resistance, strong self-cleaning ability and non-blockage.



Pretreatment - TPMBS Mechanical Rotary Brush Screen



TPMBS Mechanical Rotary Brush Screen

A typical fine screen filter cleaning machine. The device has reasonable structure and can effectively remove fine suspended organisms and impurities in water. The smallest slot size can be 0.02mm.

Advantages:

Fine filtration

High separation efficiency

Smooth water flow

Stable operation

Low energy consumption

Small space occupation

Long service life

Convenient installation and maintenance



Pretreatment - TPBGS Rotating Arm Mechanical Bar Screen



TPBGS Rotating Arm Mechanical Bar Screen

A kind of device which can continuously and automatically remove dirt of various shapes in the fluid, aiming at solid-liquid separation. It can be widely used as a special equipment in textile, leather, pharmaceutical, food, water plant, power plant and other industries. The structure of the equipment is reasonable, and it can effectively remove fine suspended organisms and impurities in the water, such as grass, garbage, fibrous materials and other debris, to prevent them from entering the water pump and subsequent equipment, and ensure the normal operation of the water pump and other equipment.

Advantages

High efficiency filtration

Smooth water flow

Stable operation

Automatic operation

Low noise, low energy consumption, small land occupation

Long service life



Pretreatment - TPR Micro-screen Rotating Drum Filter



TPR Micro-screen Rotating Drum Filter

A equipment can clean scum, short fiber and suspended matter from the water intake, and then discharge them after dewatering. It can be used for wastewater treatment engineering such as high precision process, small grid gap and low depth of channel.

Advantages:

High efficiency and big flow rate

Full stainless steel body, low maintenance cost, long lifetime

Equipped with flushing device for self cleaning

Integrated multi-function, compact structure





TPBS Sieve Bend Screen Filter

A small-scale unpowered separate equipment, used for processing the suspended solids, floating objects, and sediment, etc... during the wastewater treatment. The material of this equipment normally adopt stainless steel, and the gap can be made different, such as 0.25mm, 1.0mm, 2mm, etc.

Advantages:

- No energy cost
- Large capacity
- Easy to clean
- Long service life



Pretreatment - TPI Inward Water Drum Filter



TPI Inward Water Drum Filter

One of the pretreatments solid separating devices used for small and medium wastewater treatment plants, can remove solid suspended matter continuously and effectively. In some wastewater treatment, 30% to 60% of the organic and inorganic solid suspended matters will be removed and greatly reducing the subsequent workload.

Advantages:

Simple structure, high reliability

Compact structure, small covering area

Wedge wire screen drum for excellent hydraulic performance



Pretreatment - TPO Outward Water Drum Filter



TPO Outward Water Drum Filter

Also known as rotary micro-filtration machine, is suitable for solid-liquid separation in industrial wastewater, and can remove suspended particles larger than 0.2mm. The wastewater is gently and evenly distributed into the rotating screen cylinder from the buffer water inlet, and by the rotation of screen and inner wall slag guide screw, the slags are discharged through the other end, and the filtered water is discharged from the gap of the drum screen.

Advantages:

Uniform water distribution and big capacity

Simple structure, stable running, easy maintenance, long service life

Use the chain transmission, with high transmission efficiency

With reverse flushing device, reduce clogging

Anti-overflow board on both sides to prevent water splash



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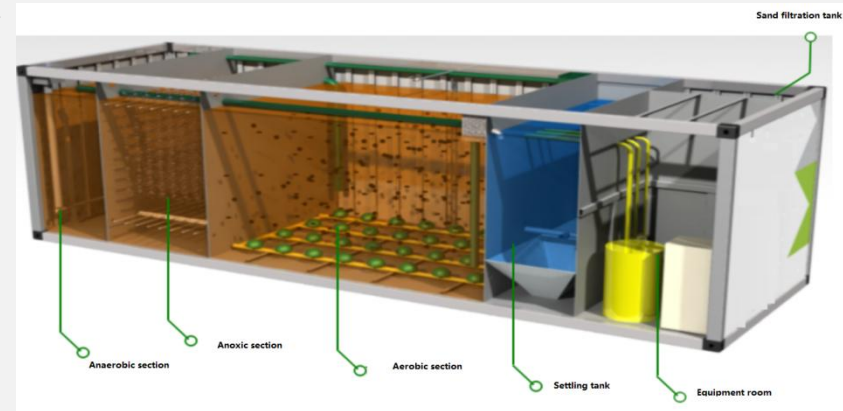
Sewage treatment-TPIST Intergrated Sewage Treatment Equipment

TPIST Intergrated Sewage Treatment Equipment

Based on the international advanced biological treatment technology, summarizing the operating experience of the sewage treatment equipment at home and abroad, we have developed a series of integrated sewage treatment equipment, which can remove BOD5, COD and NH3-N by integrated, with features of stable and reliable technical performance, good treatment effect, less investment, automatic operation, convenient maintenance operation and small footprint, no need of construction and etc. The equipment can be buried type, does not occupy the surface area, on the ground can plant flowers and grass, does not affect the surrounding environment.

Advantages

1. With nitrogen and phosphorus removal ability, optimize wastewater treatment capacity by adjusting equipment structure.
2. The filler in the contact oxidation tank is light, high strength, stable physical and chemical properties, large specific surface area, strong adhesion ability of biofilm, and high contact efficiency between sewage and biofilm.
3. Uniform aeration, microorganisms are mature, with the characteristics of activated sludge process.
4. The outlet water quality is stable, the sludge production is small and easy to treat.
5. The submersible pump can be set in the equipment to reduce the project investment.
6. The equipment can be set on the ground or underground, automatic control, simple management and operation.
7. It can be made into mobile integrated sewage treatment equipment for multi-points use.
8. The process flow and equipment configuration can be designed according to different inlet and outlet water quality standards.



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Sludge concentration -TPDN Belt thickener



TPDN Belt thickener

A full-automatic sludge thickener machine which can replace the traditional sludge thickener tank, is mainly composed of driving device, frame, filter belt, filter belt tensioning device, filter belt cleaning device, discharging device, electrical control system, etc.

It is widely used in papermaking, municipal, textile, river, pond sediment and other industries.

Advantages

- It can directly concentrate the sludge of secondary sedimentation tank rapidly and continuously. After using this equipment, there is no need to build a sludge thickening tank, which greatly reduces the construction investment and floor area.
- The sludge concentration after thickening and separation is stable and adjustable in the range of 90-96%.
- The main frame adopts integral spraying treatment technology, which can resist acid and alkali corrosion for ten years.
- The rubber rollers are made of high-quality natural rubber with acid and alkali resistance and wear resistance, which is processed into fully sealed rollers (the surface, end and shaft head are all covered with rubber).
- The air cylinder is used to control the tightening and deviation correction to ensure the normal operation of the mesh belt.
- The machine adopts the international advanced technology and the most advanced design concept, which can meet the needs of different industries for sludge thickening treatment.



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Sludge dewatering - TPDY Belt filter press



TPDY Belt filter press

It is mainly composed of driving device, frame, press rollers, upper filter belt, lower filter belt, filter belt tension device, filter belt cleaning device, discharging device, air control system, electrical control system, etc. It is widely used in tailing dry discharge, sand washing sludge, construction piling sludge, papermaking sludge, textile printing and dyeing sludge, leather sludge, ore dressing sludge, food factory activated sludge, circuit board sludge, ceramic and marble polishing sludge, electroplating sludge, water washing kaolin sludge, coal washing plant clean coal dewatering, river pond sediment sludge, chemical plant sludge, etc.

Advantages

- The main frame adopts integral spraying treatment technology, which can resist acid and alkali corrosion for ten years.
- The rubber rollers are made of high-quality natural rubber with acid and alkali resistance and wear resistance, which is processed into fully sealed rollers (the surface, end and shaft head are all covered with rubber).
- The air cylinder is used to control the tightening and deviation correction to ensure the normal operation of the mesh belt.
- The main driving device adopts frequency conversion speed regulation or mechanical stepless speed regulation.
- The supporting process of the system is unique, stable and reliable. The combination of dynamic and static flocculation reaction is adopted to make full use of the reagent, and the operating cost is significantly lower than that of similar products.
- The rubber rollers are made of seamless steel tube with through shaft processing into blank, and the bearing capacity is greatly improved compared with that of similar products.
- The bearing pedestal is made of full sealed steel casting, which is strong and durable. Its bearing capacity is 2.7 times larger than that of ball bearing.
- The screen roller and bolt are made of high quality stainless steel.



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Sludge dewatering- TPBK Plate frame filter press



TPBK Plate frame filter press

As a solid-liquid separation equipment, it has been used in industrial production for a long time. The filter press is an intermittent solid-liquid separation equipment, which is designed and manufactured by mechanical and electrical integration. It has reasonable structure, simple and convenient operation, and can realize the filter plate pressing, pressure maintaining, moving plate loosening and other processes. Under the pressure of the feed pump, the sludge is sent into the filter chamber, and the solid and liquid are separated through the filter medium. It is widely used in the wastewater treatment of chemical industry, dyestuff, petroleum, ceramics, pharmacy, sugar making, food, starch, sugar smelting, paint, slime, metallurgy and other various industries.

Advantages

- Box type, molding, with fast filtering speed, low moisture content of filter cake, good anti-corrosion and sealing performance.
- In order to further reduce the moisture content of the filter residue, our company has developed a diaphragm press filter press, which greatly improves the work efficiency and economic benefits. The moisture content of the dewatered sludge cake is below 60%.
- High quality polypropylene material is adopted and its effectiveness is verified by its high load characteristics. Strong corrosion resistance to acid, alkali, salt, non-toxic, tasteless, light weight, high strength (high temperature, high pressure), labor-saving operation.
- Hydraulic pressure, automatic pressure maintaining, automatic cleaning, diaphragm pressing and automatic pulling plate device (optional)



Fine filtration – TPMF Manganese sand filter



TPMF Media filter

Utilizing the catalytic effect of manganese sand, manganese sand filter (iron removal manganese filter) oxidize divalent iron and manganese ions into trivalent ions, and then adsorb and filter with natural manganese sand to reduce the content of iron and manganese ions in water. Therefore, it is widely used in the deep treatment of various process water, domestic water, circulating water and wastewater, such as power, electronics, beverages, tap water, petroleum, chemical industry, metallurgy, textile, papermaking, food, swimming pool, municipal engineering and so on.

Advantages

- The water cap adopts top-quality V-slot filter element, with accurate gap, extremely smooth surface, easy to wash, not easy to block and high strength;
- Long life;
- Simple operation and convenient maintenance;
- Good filtering effect and compact structure;
- The control mode can be manual / automatic;
- Materials can be customized according to customer requirements: carbon steel, SS304, SS316, etc



Fine filtration – TPSF Quartz Sand Filter



TPSF Media filter

Quartz sand filter, also known as shallow medium filter, is a high-efficiency filtering equipment that uses quartz sand as the filtering medium to filter high turbidity water through granular or non granular quartz sand with a certain thickness under a certain pressure, effectively intercept and remove suspended solids, organic matter, colloidal particles, microorganisms, chlorine, smell and some heavy metal ions in the water, and finally achieve the effect of reducing water turbidity and purifying water quality.

It is widely used in the deep treatment of various process water, domestic water, circulating water and wastewater, such as power, electronics, beverages, tap water, petroleum, chemical industry, metallurgy, textile, papermaking, food, swimming pool, municipal engineering and so on.



Advantages

The water cap adopts top-quality V-slot filter element, with accurate gap, extremely smooth surface, easy to wash, not easy to block and high strength; Long life;

Simple operation and convenient maintenance;

Good filtering effect and compact structure;

The control mode can be manual / automatic;

Materials can be customized according to customer requirements: carbon steel, SS304, SS316, etc



Fine filtration – TPCF Active Carbon filter



TPCF Media filter

The activated carbon filter uses activated carbon to fully contact the impurities in the water, and these impurities can be adsorbed in the pores of the activated carbon. The activated carbon filter can remove color, odor and impurities such as colloids in water effectively. Therefore, it is widely used in the deep treatment of various process water, domestic water, circulating water and wastewater, such as power, electronics, beverages, tap water, petroleum, chemical industry, metallurgy, textile, papermaking, food, swimming pool, municipal engineering and so on.

Advantages

The water cap adopts top-quality V-slot filter element, with accurate gap, extremely smooth surface, easy to wash, not easy to block and high strength;

Long life;

Simple operation and convenient maintenance;

Good filtering effect and compact structure;

The control mode can be manual / automatic;

Materials can be customized according to customer requirements: carbon steel, SS304, SS316, etc



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Fine filtration – TPS Softener



TPS Softener

TPS Softener is designed by using the characteristics of strong acidic resin absorbing the calcium and magnesium ions in the water and softening the water, while it can reproduce by salt solution.

TPS Softener is mainly applicable to boilers, thermal power plants, chemical, textile, pharmaceutical, biological, electronics, and atomic energy industry, pure water pre-treatment, industrial water softening, and deionized water preparation, as well as decolorization and purification of foods and drugs, recycling of precious metals and chemical raw materials, and electroplating wastewater treatment, etc.

Advantages

- Water nozzle use top quality of V - SLOT screen, precise gap, smooth surface, easy to wash, not easy clog, sturdy, and long service life.
- Fully automatic control: adopting intelligent microcomputer and PLC program control, which can realize single or dual mode controlling time and flow regeneration. In addition to salt, it's a full automatic working cycle process.
- Equipment in a variety of forms: A single tank and single valve intermittent water output; Double tank single valve, one use and one prepare, continuous water output; tank & valve combination, realizing the intermittent or continuous water output, can serve in different occasions where water needed.



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Fine filtration - TPBC/SC Self cleaning filter



TPBC/SC Self cleaning filter

TPBC/SC self-cleaning filter adopts V-slot type filter element which is strong and durable. It has super large filtration area, fine filtration and high reliability. It can be used in bad water quality, such as oily muddy impurities, soft viscous impurities, high impurity content, a small amount of hair and fiber impurities. Widely used in water treatment, steel, paper, mining, petrochemical, mechanical processing, municipal, agricultural irrigation and other industries.

Advantages

Automatic continuous online filtering

Large filtration area, low surface velocity, low pressure loss and low energy consumption

Easy to wash, high strength, long life

High strength structure, efficient backwash, saving time

Reliable system, low operation cost, simple maintenance



TPB type full automatic back flushing water filter

TPB type full automatic back flushing water filter:

TPB type full automatic back flushing water filter is the product that we introduce and absorb foreign advanced technology. The filter has continuous filtration, automatic flushing sewage, compact structure. The operation process is reliable, the processing capacity is big, the sewage water consumption is small, and the operation cost is low. The cleaning and discharging process of the TPB type full automatic back flushing water filter is automatically operated in the process of equipment operation. TPB type water filter mainly used in power plant auxiliary cooling water, industrial circulating water, fire water, sewage, water, washing liquid and similar suspension coarse filter and fine filter. Top quality V-SLOT filter element, consistent opening height, extremely smooth, easy to scrap, high strength, long service period



Specification:

Design pressure: 0.6Mpa, 1.0Mpa, 1.6Mpa

Working pressure: <1.0Mpa, <1.6Mpa

Water supply pressure: <0.25Mpa

Screen slot size: (10~500um), (1~6mm) (customized)



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Scope Of Application And Characteristics:

TPWL automatic scraper horizontal filter is suitable for water quality filtration of various water supply systems, process water systems and industrial cooling water systems. It can filter out all kinds of impurities in water, cut off branches and weeds, and ensure the safe and reliable operation of system equipment. In addition to the backwashing and sewage removal functions of all domestic filters at present, the water filter also adopts a scraper and brush arranged along the flow direction, which can effectively cut and crush weeds, branches and floats and discharge them smoothly. The cost and time of maintenance will be greatly reduced by using the water filter, and the old age can be completely solved. The shortcomings of blockage and blockage of filters.

Composition Of Water Filter

The automatic horizontal water filter is mainly composed of the filter body, stainless steel filter element, scraper, reducer, electric sewage valve, electrical control system, sewage discharge mechanism, vent valve, inlet and outlet pipe and sewage pipe.

Main characteristics:

- A sewage valve overtorque and flow guide valve overtorque automatic stop function;
- B Auto backwash cleaning and automatic sewage discharge function;
- C self-washing hanging brush cleaning function;
- D has three functions: automatic sewage discharge, differential pressure sewage discharge and manual control sewage discharge.
- Top quality V-SLOT filter element, consistent opening height, extremely smooth, easy to scrap, high strength, long service period



Power plant equipment-XLQ Hydrocyclone

XLQ Hydrocyclone

The hydrocyclone is installed in the water supply pipeline for water and power plant cooling water and the main shaft seal water filter, can effectively remove the mud and sand and impurities, so that the filtered water quality to meet the requirements of water.

Operating Principle

As a kind of common separation and classification equipment, hydraulic cyclone is a centrifugal settling. When the separation of the two-phase or three-phase mixture with certain pressure from the perimeter of the cyclone cut to enter into the cyclone, strong three-dimensional elliptic strong rotational shear turbulent motion, due to the coarse grain (or heavy phase) and fine particles (or light) exist size difference (or density), by the centrifugal force, centripetal buoyancy, fluid drag force of different sizes, by centrifugal sedimentation, most coarse particles (or phase) via the cyclone bottom discharge discharge, and the filtered clean water is discharged from the water outlet, so as to achieve classification and filtration separation.



Filter accuracy and working pressure

1.Accuracy:

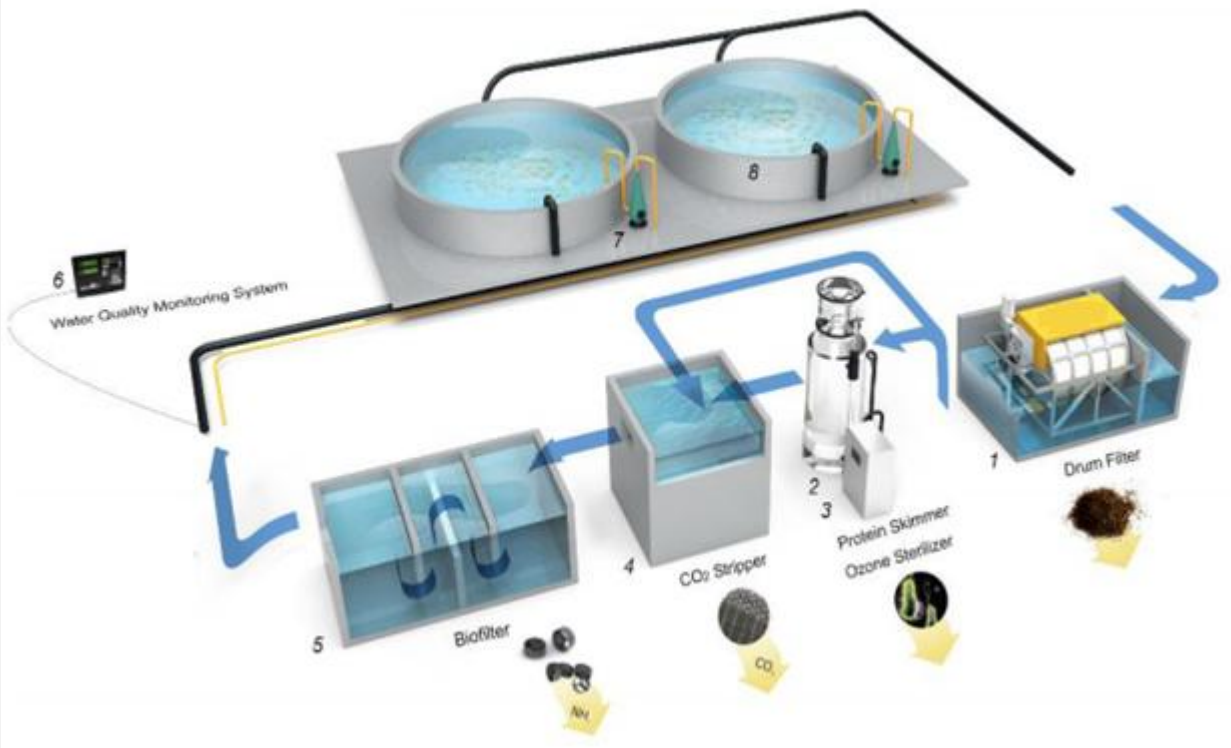
1.1 Accuracy of water to be treated: 1-5mm

1.2 After cyclone treatment: <0.5-2mm

2.Pressure: 0.3-0.6Mpa



RAS process flowchart



Industrial aquaculture recirculating system:

1. Drum filter: to separate solid particles (fish feces and residual bait)
2. Protein skimmer: to separate dissolved protein and fine solid particles
3. Ozone disinfection machine: (can be replaced by UV disinfection equipment), to remove bacteria and viruses in water
4. CO₂ stripper: to remove carbon dioxide from water, improve pH value and increase dissolved oxygen
5. Biofilter: to remove nitrite
6. Water quality monitoring system: real-time monitoring of water quality indicators and real-time feedback control
7. Oxygen cone: pure oxygen oxygenation
8. Fish pond: round, cone bottom, easy to drain
9. Others: thermostatic system



Drum filter

Introduction

The automatic box type rotary drum filter is mainly composed of box components, drum components, back cleaning system and electric control box. The treatment capacity can be customized according to demand, and it's made of non-toxic, corrosion-resistant and environmental protection materials.

It is a kind of screen filter which intercepts fine suspended matter. In the field of aquaculture, micro filter machine is the key equipment, used in the first stage of raw water filtration, to separate the water sediment, fish dung, feed, suspended algae, particles, etc.

Advantage

- Adopt top quality SS welded mesh frame, which is firmly welded, more durable than ordinary plastic frame. Long service life, low maintenance cost.
- Equipped with a liquid level monitoring system, which can automatically monitor and identify the operation, perform timely and effective flushing.
- Adopt high-quality materials, PP, SS304, SS316, etc. Strong stability and meet the requirements of all filter boxes.
- Integrated overall design, seldom breaks down, convenient and short maintenance



TPA:20-150m³/H



TPK: 200-500m³/H



The integrated rotary drum filter

Introduction

The integrated rotary drum filter integrates microfiltration, biochemical and ultraviolet disinfection, which can effectively filter residual bait and fish in the water, degrade ammonia nitrogen and nitrite, and it is equipped with automatic backwashing device, which can quickly clean and discharge sewage;

It can be customized according to specific treated water capacity, and it is made of non-toxic, corrosion-resistant and environmental-friendly materials.

It's widely used in garden landscapes, villas, high-end residences, koi fish pond filtration, etc.

Advantage

- Hydraulic automation: the whole system can run only when the water pump is turned on;
- No-pressure system: the whole system operates without pressure, and power consumption is lower than conventional pressure systems;
- Fine filtration process: multi-layer filtration to remove impurities;
- No chemical adding: It is forbidden to put any chemical in the whole system;
- No need to change the water: the pond water is circulated internally, and a small amount of evaporated water need to be replenished every month;



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Micro Nano Protein skimmer

Introduction

Micro Nano protein skimmer is a mechanical device that removes particles and organic matter dissolved in water and improves water quality.

Advantage

- Employ micro nano bubble system, high purification efficiency, more stable dissolved air, high operation efficiency, shorten operation time, low operation cost
- Effectively remove more than 90% of residual bait, excrement, colloids and other organic matter in water, reduce the biological treatment load, and ensure the safety of aquaculture water quality.
- Continuous automatic operation.
- Collection cup with cleaning device, automatic cleaning, easy maintenance.
- Integrated overall design, compact structure, small footprint, simple installation



Ozone disinfection machine

Introduction

The ozone disinfection machine has high reliability, wide use and low cost. Its sterilization and disinfection function can be used in various industries, such as: aquaculture, water purification, sewage treatment, waste gas treatment, food and beverage processing, cold storage, medical and industrial ozone applications.



Advantage

- Adopt wide voltage and high frequency technology, low power consumption, high O₃ concentration, rapid sterilization, adapt to any area of household electricity voltage, long service life
- Compact structure, small footprint, easy to install and operate.
- The internal air source is cleaned and dried to meet the requirements of clean and dry air source.
- Built-in PSA oxygen production system, high oxygen purity, high ozone output concentration



Biofilter

Introduction

Adopting 3-stage filtration structure, it has a large filtration area, small equipment area, compact structure, high treatment efficiency, filtration and sewage discharge could be performed at the same time, which does not affect or interrupt the normal use of the system. In addition, the equipment has obvious effect on removal of organic matter from water.

It is suitable for filtering suspended impurities in low-viscosity liquids, and is widely used in the treatment of fresh and marine aquaculture circulating water. The seawater adopts ultrafiltration white cotton, which has a better filtering effect.



Advantage

- Combined with imported technology, smart internal combination;
- Non-toxic anticorrosive material, durable;
- With drain valve, the equipment is simple to operate and easy to maintain;
- Select special biochemical media, biochemical effect is remarkable



Other corollary equipment

Oxygen cone

The oxygen cone is a special aeration device specially used for high-density circulating aquaculture. It is a special pressure vessel whose main function is to increase the pressure to force the air to overcome the surface tension of water and passively dissolve under the condition of full mixing of air and liquid. Therefore, the oxygen cone should be used in conjunction with booster pumps, jets and other equipment. Air source adopts oxygen generator or oxygen cylinder (oxygen purity is greater than 90%)



Sand tank filter

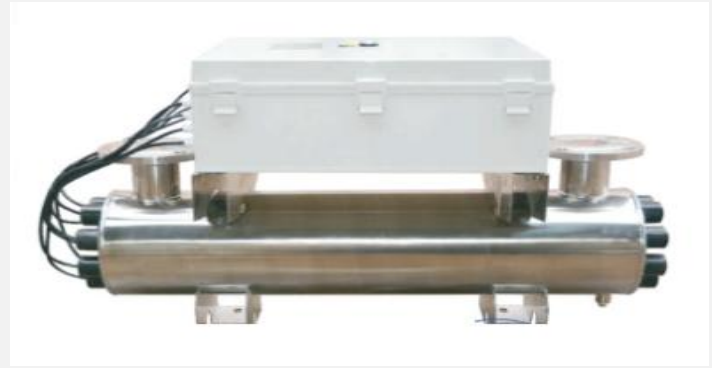
The tank body is made of glass fiber reinforced plastic, which is resistant to abrasion and corrosion. The unique design of the water distributor can evenly stabilize the water flow, easy to install and maintain.



Other corollary equipment

UV sterilizer

Use the energy of UV photons to destroy the DNA structure of various viruses, bacteria and other pathogens in the water body. When the water to be treated flows through the cavity, the UV rays will sterilize the bacteria, viruses and other microorganisms in the water to achieve the purpose of disinfecting.

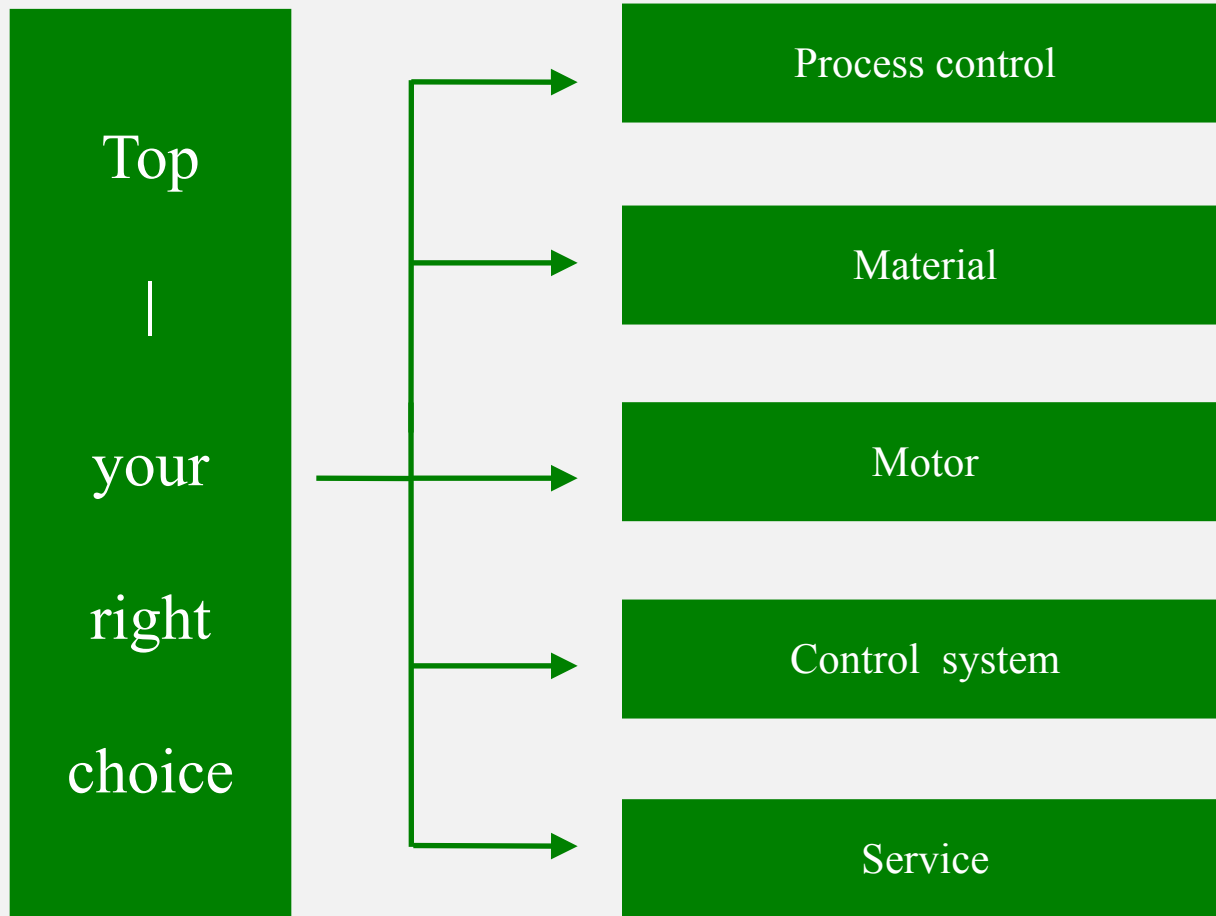


Plastic fish pond

Plastic fish pond is specially designed for industrial circulating water aquaculture treatment system, hatching and breeding, broodstock, shrimp breeding. It's a special fish pond with environmental protection, non-toxic, long service life, smooth surface, corrosion resistance, aging resistance, leakage prevention, and high strength. The fish pond is easy to use, the inlet and outlet connections are simple, and can be designed and modified according to different usage requirements, etc.



Reasons to choose Top Equipment





Storage



Production



Debugging



Packing



User training



Install and commision instruction



Material

All materials have passed the related certificate

宝②钢 宝山钢铁股份有限公司
BAOSTEEL IRON & STEEL CO., LTD.

产品质量证明书
INSPECTION CERTIFICATE

上海市长宁区苏州路441号 邮编 201106
No. 441 Suzhou Road, BAOSHAN DISTRICT
201106 SHANGHAI P. R. CHINA
TEL: 021-66494104
FAX: 021-66494102

钢厂名称
Manufacturer: CORE BASE

客户名称 CUSTOMER	上海宝钢集团建设有限公司	产品名称 PRODUCT	冷轧镀锌
客户地址 PURCHASER	上海宝钢集团建设有限公司	客户名称 CUSTOMER NAME	宝钢集团
客户电话 TEL	021-6181 1874-50	客户地址 CUSTOMER ADDRESS	宝钢集团
客户传真 FAX	021-6181 1874-50	客户电话 CUSTOMER TEL	宝钢集团

炉号 HEAT NO.	钢号 STEEL NO.	规格 SIZE	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	
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化学成分
CHEMICAL COMPOSITION

力学性能
MECHANICAL PROPERTIES

备注
REMARKS

钢厂名称
Manufacturer: CORE BASE

Baosteel's certificate

山西太原不锈钢股份有限公司
SHANXI TAIYUAN STAINLESS STEEL CO., LTD.

产品质量证明书
QUALITY CERTIFICATE

证书编号: 0340-01-000039250
Certificate No.
0340-01-000039250

合同号 Contract No.	000017186-00000	订单单位 CUSTOMER	上海宝钢集团建设有限公司	收货单位 PURCHASER	宝钢集团
产品名称 PRODUCT	高强度不锈钢板	执行标准 STANDARD	GB 18254-2002	规格 SPEC	304 2.0

炉号 HEAT NO.	钢号 STEEL NO.	规格 SIZE	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	
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化学成分
CHEMICAL COMPOSITION

力学性能
MECHANICAL PROPERTIES

备注
REMARKS

Taiyuan steel certificate

济群钢铁(集团)有限公司
JIUQUAN IRON & STEEL GROUP CO., LTD.

产品质量证明书
INSPECTION CERTIFICATE

合同编号: 0527-6714841
Contract No. 0527-6714841

总重量 Total Pages	共1页	页号 Page No.	第1页
收货单位 Customer	无锡华联钢铁有限公司	产品名称 Product	不锈钢热轧酸洗板
收货单位 Purchaser	无锡华联钢铁有限公司	目的地 Destination	无锡
规格 Specification	J15 51304-3005	合同号 Contract NO.	1303411120000
牌号 Type	30304	生产日期 Date of Issue	2013/3/27
表面质量 Surface Finish	2B	质保书编号 Certificate NO.	913030703

炉号 HEAT NO.	钢号 STEEL NO.	规格 SIZE	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	重量 WT	长度 LEN	宽度 WID	厚度 THK	
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化学成分
CHEMICAL COMPOSITION

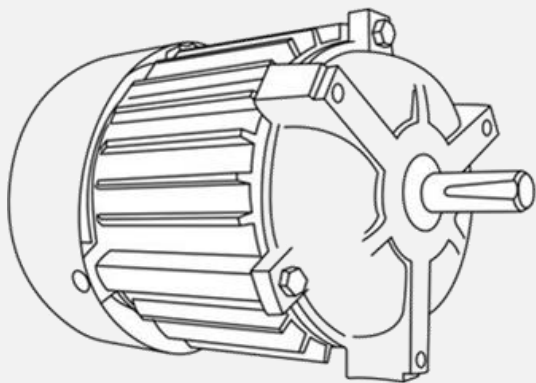
力学性能
MECHANICAL PROPERTIES

备注
REMARKS

Jiuquan steel group certificate



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The main motor use the famous brands such as SEW, TUSBANKI, GUOMAO, ESERVO etc. The motor of these brands has been practiced and demonstrated by markets for many years, with reliable quality and strong stability.



Control system



The electrical control system is Relay control (standard configuration) or PLC with touch screen from Siemens. And electronic parts are Schneider.

Control system



The electrical control system is Relay control (standard configuration) or PLC with touch screen from Siemens. And electronic parts are Schneider.