



SEWAGE TREATMENT EQUIPMENT

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Company Profile

Weifang Hengyuan Environmental Protection Water Treatment Equipment Co., Ltd. is located in the beautiful kite capital of the world-Weifang City, is a comprehensive production-oriented high-tech enterprise integrating research and development, production and sales of water treatment equipment, disinfection equipment and ecological toilets, the company was founded in January 2011, with a standardized production workshop of more than 30,000 square meters.

The company has environmental protection engineering level 2 qualification, 7 invention patents, 36 utility model patents, 1 appearance patent, 6 software copyrights, 27 water-related approvals, 8 disinfection records and other related qualifications. We have passed ISO9001 quality system certification, ISO14001 environmental management system certification, ISO45001 occupational health and safety management system certification and after-sales service system certification and other authoritative certifications. Selected by the national environmental protection equipment manufacturing industry (sewage treatment) standard conditions of enterprises, the national water conservancy system bidding products key procurement directory enterprises, and was named a high-tech enterprises, the province specializing in new small and medium-sized enterprises, the province innovative small and medium-sized enterprises, the province "morning star factory", a enterprise a technology research and development center and other honorary titles.

The company's main products are: integrated (life, hospitals, breeding, etc.) sewage treatment equipment, air flotation machine (vortex concave, dissolved air, vertical flow, shallow), sedimentation tank (advection, vertical flow), ecological latrines, anaerobic reactor, the center of the rotating scraper, cyclone sedimentation tank sand remover, rotary mechanical grid, sludge treatment (plate and frame filter press, belt filter press, stacked screw machine), integrated water purification equipment, Filtration device (activated carbon filter, iron and manganese filter, quartz sand filter), dosing device (PAC dosing device, PAM dosing device, basic dosing device), disinfection equipment (sodium hypochlorite generator, ozone generator, electrolysis chlorine dioxide generator, chemical chlorine dioxide generator, disinfection doser, slow-release disinfectant, small hospital wastewater treatment machine, oral, outpatient) Sewage treatment equipment, high-efficiency sewage disinfection equipment), dechlorination device (chemical feeder, acid mist absorber, dechlorination device), supporting series (PLC control cabinet, chlorine leakage alarm, residual chlorine detector, microcomputer controller, metering pumps, aeration machine, turbidity meter, water jets and other equipment).

At present, the company's water treatment equipment, disinfection equipment service areas covering municipal water supply, municipal sewage treatment, medical systems, residential communities, highways, scenic spots, various types of factories (aquaculture factories, chemical factories, etc.), industrial recycling of cooling water, water reuse and so on. Eco-toilets are widely used in public places such as municipalities, scenic spots, squares, harbors and busy commercial areas. "Hengyuan Xinda" brand series of products sell well throughout the country and in Mexico, Thailand, South Korea, Namibia, Sri Lanka and other countries at home and abroad, and have been well received by customers!

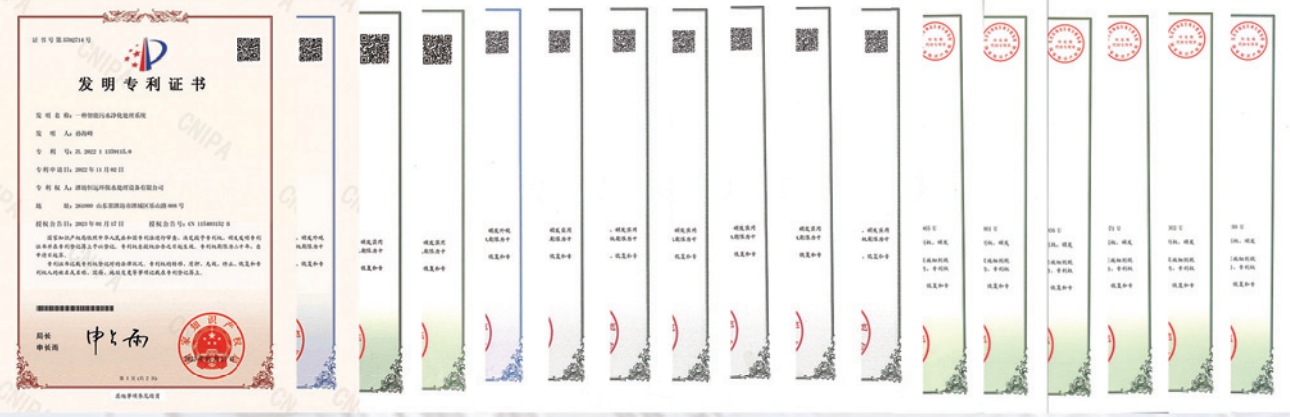
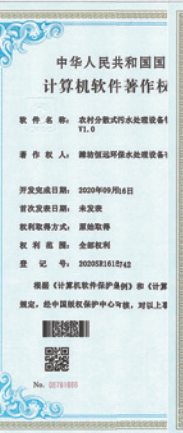
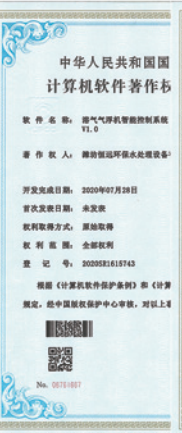
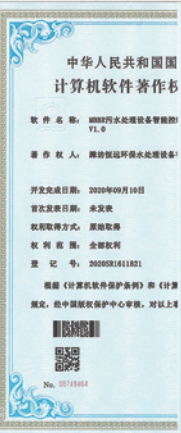
The company has strong technical force, has its own laboratory and a large number of management, scientific research and technical personnel, to provide customers with excellent pre-sales, sales and after-sales service, and according to the customer's water conditions, the design of reasonable water treatment equipment and equipped with the program, so as to achieve economic and practical, high quality and high efficiency.

Weifang Hengyuan Environmental Protection Water Treatment Equipment Co., Ltd. is committed to the water treatment industry in line with the business philosophy of "quality first, integrity-based" and the corporate purpose of "external achievement of customers, internal achievement of the staff" to build a good ecological environment to lay a solid foundation, but also the "green water" of mankind and society. Humanity and society "green water and mountains".

Qualifications and honors



- ★ National Environmental Protection Equipment Manufacturing Industry (Wastewater Treatment) Specification Condition Enterprises
- ★ High-tech enterprises
- ★ Province Specialized, Specialized and New Small and Medium-sized Enterprises
- ★ Provincial innovative small and medium-sized enterprises
- ★ Environmental Protection Engineering Specialized Contracting Grade II Qualification
- ★ 7 patents for inventions
- ★ 36 utility model patents
- ★ 1 Appearance Patent
- ★ 27 water-related approvals
- ★ 6 software copyrights
- ★ Sterilization filing 8 items
- ★ One enterprise, one technology R&D center
- ★ ISO9001 Quality Management System Certification
- ★ ISO14001 Environmental Management System Certification
- ★ ISO45001 Occupational Health and Safety Management System Certification
- ★ After-sales service system certification





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A new chapter in water management



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HYW-AO integrated sewage treatment equipment



Product Features

- ◆ HYW-AO series sewage treatment equipment HYW-AO series sewage treatment equipment can be divided into buried type and above ground type.
- ◆ HYW-AO series sewage treatment equipment consists of two levels of pool body, one level is reinforced concrete structure with greater depth of burial, and the other level is steel structure with shallower depth of burial. The steel structure pool adopts the first interpenetrating network anticorrosion coating for anti-corrosion, which is a kind of rubber network and plastic network running through each other to form an interpenetrating network polymer, which can resist acid, alkali, salt, gasoline, aging, abrasion, rust and rust. After the equipment is generally coated with the coating, the anti-corrosion life can reach more than 15 years.
- ◆ HYW-AO series sewage treatment equipment due to the biological contact oxidation tank in the AO biological treatment process, the volume load of its filler

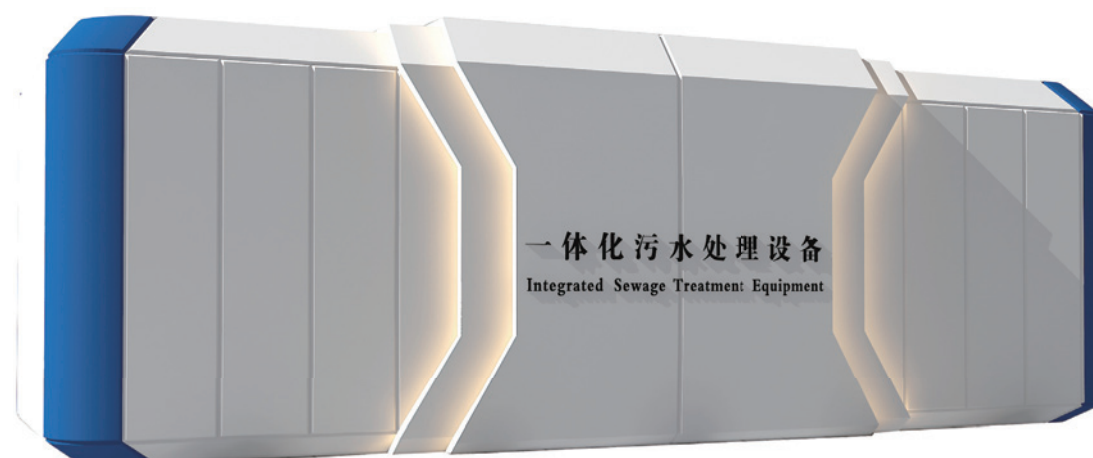
is relatively low, microorganisms are in the stage of their own oxidation, so the amount of sludge produced is less. In addition, the water content of the sludge produced by the biological contact oxidation tank is much lower than that of the sludge produced by the activated sludge tank. Therefore, the amount of sludge produced after sewage treatment equipment of HYW series is less, and it usually takes only about 90 days to discharge sludge once.

- ◆ HYW-AO series of sewage treatment equipment in addition to the use of conventional blower noise reduction measures (such as vibration isolation pads, silencers, etc.) also set up a new type of sound-absorbing materials in the inner wall of the blower room, so that the equipment operation noise is less than 50 decibels, reducing the impact on the surrounding environment.
- ◆ HYW-AO series sewage treatment equipment is equipped with soil deodorization facilities. It utilizes the upper space of the reinforced concrete structure pool body to set up the improved soil and gas distribution pipe. When the malodorous ingredients through the soil layer dissolved in the water contained in the soil, and then due to the soil surface adsorption and chemical reaction into the soil, and ultimately by the microorganisms in the decomposition of the deodorization purpose.

application scenario

- ◆ Hotels, hospitals, nursing homes, hospitals.
- ◆ Residential neighborhoods, villages, towns.
- ◆ Stations, airports, seaport terminals, ships.
- ◆ Factories, mines, troops, tourist spots, scenic areas.
- ◆ Various industrial organic wastewater similar to domestic sewage.
- ◆ Processing water volume: 1.0 ~ 80.0m³/h, greater than 80.0(m³/h) need to be designed separately.

MBR integrated Sewage treatment equipment



Principle of MBR technology

- ◆ MBR process generally consists of membrane separation module and bioreactor, the membrane module instead of secondary sedimentation tank for solid-liquid separation. As the membrane can retain all the biomass in the reactor, it can obtain long sludge age and high suspended solids concentration, which is conducive to the proliferation of slow-growing nitrogen-fixing bacteria and nitrifying bacteria, and it can realize simultaneous nitrification and denitrification without time-delayed aeration, which strengthens the nitrification capacity of activated sludge, and makes the rate of residual sludge production much smaller than that of activated sludge process and makes the system run more flexibly and stably.

application scenario

- ◆ Residential neighborhoods, office buildings, hotels, car washes, highway service areas, toilet sewage treatment, factories and other domestic sewage and similar industrial organic wastewater, such as textile, beer, paper, tannery, food, chemical and other industries of organic wastewater treatment.

Technical Benefits

- ◆ MBR is an efficient combination of membrane separation technology and biological treatment method, its origin is to replace the secondary sedimentation tank in activated sludge method with membrane separation technology for solid-liquid separation. This process not only effectively achieves the purpose of mud-water separation, but also has the advantages of the traditional process of tertiary wastewater treatment are incomparable. Highly efficient solid-liquid separation, the separation effect is much higher than the traditional sedimentation tank, the effluent water quality is good, the effluent suspended solids and turbidity is close to zero, can be directly reused, realizing the sewage resources.
- ◆ The high efficient retention effect of the membrane makes the microorganisms completely retained in the bioreactor, realizing the complete separation of the reactor hydraulic retention time (HRT) and sludge age (SRT), and the flexible and stable operation control.
- ◆ Because MBR will be the traditional wastewater treatment of aeration tank and two sedimentation tanks into one, and replace all the process facilities of tertiary treatment, so it can significantly reduce the footprint and save investment in civil engineering.
- ◆ It is favorable for the retention and propagation of nitrifying bacteria, and the system has high nitrifying efficiency. Through the change of operation mode, it can also have the function of ammonia removal and phosphorus removal.
- ◆ The degradation efficiency of difficult-to-biodegrade organic matter is greatly improved by the longer retention time of the mud age.
- ◆ The reactor operates under high volumetric load, low sludge load and long sludge age, and the residual sludge production is extremely low. Since the sludge age can be infinitely long, theoretically zero sludge discharge can be realized.
- ◆ The system realizes PLC control and is easy to operate and manage.

MBBR wastewater treatment equipment



MBBR process characteristics

- ◆ MBBR process combines the advantages of both traditional fluidized bed and biological contact oxidation, relying on aeration in the aeration tank aeration and the lifting effect of the water flow to make the carrier in a fluidized state, and then the formation of suspended growth of activated sludge and attached growth of biofilm, which makes the moving bed biofilm using the entire reactor space, giving full play to the attached phase and the suspended phase of the two biological superiority, so that the strengths of their shortcomings and complement each other. Different from the previous filler, suspended filler can contact with sewage frequently and many times, so it is called "mobile biofilm".

process step

- ◆ Domestic wastewater → collecting tank → grille → regulating tank → 1#MBBR tank → 2#MBBR tank → secondary sedimentation tank → sludge tank → cleaning tank → disinfecting tank → discharge

Process Introduction

- ◆ Catch Basin: Utilizes the principles of sedimentation and anaerobic fermentation to remove suspended organic matter from sewage.
- ◆ Grille: The sewage in the regulating tank is pumped to the grille, which intercepts floating and suspended particles, and the sewage flows into the subsequent process.

- ◆ Adjustment pool: sewage into the equipment before setting up the adjustment pool to adjust the quality of sewage water, water quality, adjusting the pool inlet to set up the grid box to intercept large particles in the sewage debris to ensure that the pump operates normally.
- ◆ 1#MBBR pool: the anoxic pool is set up for deamination treatment, the wastewater separated by the grille enters the anoxic pool and mixes with the reflux nitrification liquid in the contact pool, and the combined filler is placed in the anoxic pool as the carrier of denitrifying bacteria, which has a good effect on the removal of nitrogen, phosphorus, and sulfide, and is combined with the sludge pool in the preceding process to form the A/O process, so as to achieve the purpose of phosphorus removal and ammonia removal.
- ◆ 2#MBBR tank: the core part of sewage treatment, under high organic load, through a large number of different species of microbial communities attached to the filler to participate in the biochemical degradation and adsorption, to remove a variety of organic substances in sewage. In the case of low organic load, through the role of nitrifying bacteria, in the conditions of sufficient oxygen to degrade the ammonia nitrogen in the sewage, but also to reduce the COD value of sewage to a lower level.
- ◆ Two sedimentation tank: after biochemical sewage into the two sedimentation tank, two sedimentation tank design surface load of 0.6-1.2 m³/m².d two sedimentation tank for the lifting adjustable level, tooth-shaped water collection tank, its tank accumulation of water uniform sedimentation effect is better, the two sedimentation sludge pump to the sludge tank.
- ◆ Sludge tank: the dirt intercepted by the grille and the second sedimentation tank sludge are entered into the sludge tank, sludge tank is equipped with a sludge nitrification system, the supernatant of the sludge tank back to the regulating pool.
- ◆ Clear Pond: After anaerobic, aerobic and sedimentation treatment, the sewage enters the clear pond and is discharged after clear water storage.
- ◆ Disinfection pool: disinfection pool using chlorine dioxide disinfection, equipped with chlorine dioxide generator can be automatically added according to the amount of water.
- ◆ Wind machine room, automatic control cabinet: wind machine room is set up separately, equipped with aeration fan, wind machine room and microcomputer control cabinet as a whole, the wind machine room outlet pipe and the equipment into the air pipe connection, the distance between them does not exceed 15 meters.

anaerobic reactor



Product Overview

- ◆ Anaerobic reactor is a specialized reactor for high concentration organic wastewater. The anaerobic process is essentially a series of complex biochemical reactions, in which the substrate, various types of intermediate products, final products, and various groups of microorganisms interact with each other to form a complex micro-ecosystem, similar to the macro-ecology of the food chain, various types of microorganisms through the nutrient substrate and metabolism products to form a symbiotic or co-nutritional relationship. Therefore, as a micro-ecosystem providing microbial growth and reproduction, the smooth growth of various types of microorganisms and the efficient and smooth flow of materials and energy are necessary conditions for the continuous stability of the system.

Product Features

◆ UASB reactor

Underflow anaerobic sludge bed anaerobic tower (UASB) is one of the traditional anaerobic reactors. It is commonly used for the disposal of wastewater from food, beer and beverage, pulp and paper, chemical and municipal industries.

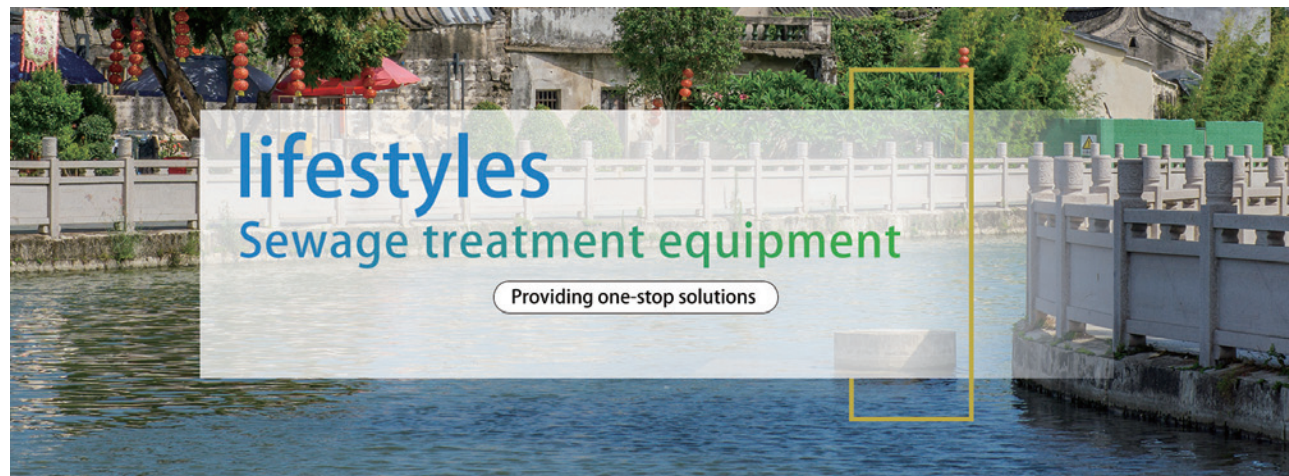
EGSB Reactor

- ◆ EGSB reactor fully utilizes anaerobic sludge technology. It is widely used for the disposal of high concentration inorganic wastewater such as starch wastewater, alcohol wastewater and other light foodstuffs.

◆ TWT-IC reactor

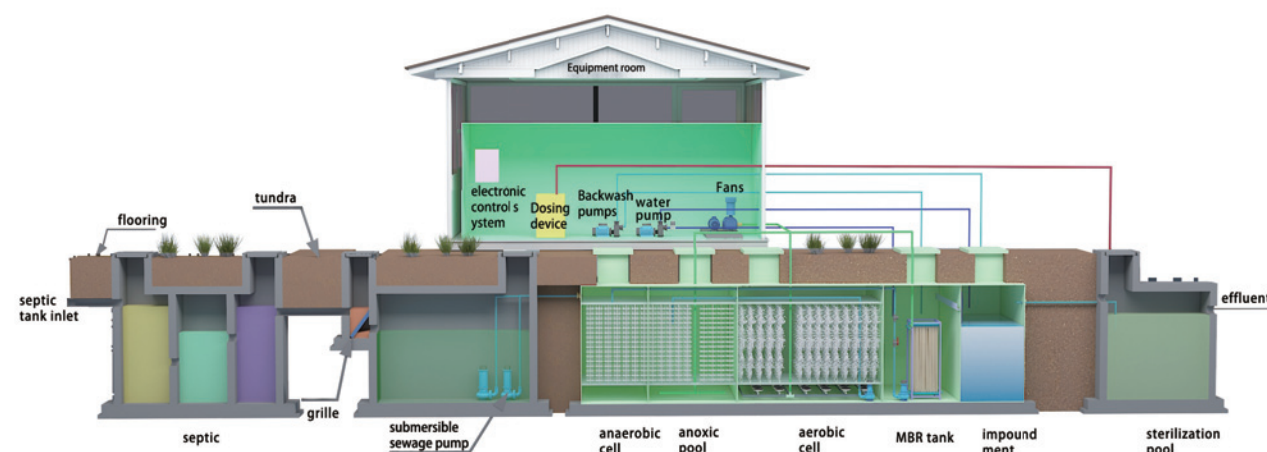
TWT-IC anaerobic tower is a new type of anaerobic reactor after UASB and EGSB. It is suitable for paper making, beer, citric acid, alcohol and other industries.





process step

- Domestic sewage treatment equipment is mainly used for domestic sewage and similar industrial organic wastewater treatment, the main treatment method is to use the more mature biochemical treatment technology - biological contact oxidation method, the specific treatment process according to the emission standards design.



Representative Processes

Equipment Composition

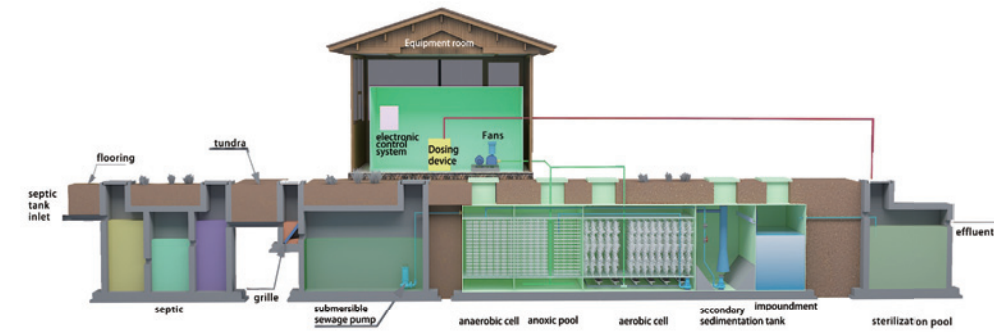
- HYW-type domestic sewage equipment is mainly composed of seven parts: (1) grille (2) anoxic pool (3) biological contact oxidation pool (4) MBR membrane pool (5) disinfection pool (6) sludge pool (7) fan room, automatic control cabinet. Before the sewage enters the equipment, a regulating tank is set up to regulate the quality and quantity of sewage water, and a grid box is set up at the inlet of the regulating tank to intercept the large particles in the sewage to ensure the normal operation of the pump.
- Grille: The sewage in the regulating tank is pumped to the grille, which is used to intercept the tiny floating and suspended particles in the sewage, and the sewage flows into the subsequent process.
- AO process: the core part of sewage treatment, in the higher organic load, through the attachment of a large number of different species of microbial communities on the filler to participate in the biochemical degradation and adsorption, to remove a variety of organic substances in the sewage, so that the sewage in the organic content of a substantial reduction. In the case of low organic load, through the role of nitrifying bacteria, in the conditions of sufficient oxygen degradation of ammonia nitrogen in the sewage, but also make the COD value in the sewage reduced to a lower level, so that the sewage can be purified.
- MBR Membrane Pond: A wastewater treatment technology that combines membrane separation and a bioreactor. MBR membrane technology removes suspended matter, microorganisms, and other impurities from wastewater through filtration, and at the same time, through the metabolism of the microorganisms in the bioreactor, it degrades organic substances in the wastewater into lower inorganic substances.
- Disinfection pools: Disinfection pools are disinfected with sodium hypochlorite or chlorine dioxide.
- Sludge tank: the dirt intercepted by the grille and the second sedimentation tank sludge are entered into the sludge tank, sludge tank is equipped with a sludge nitrification system, the supernatant of the sludge tank back to the regulating pool.
- Wind machine room, automatic control cabinet: wind machine room is set up separately, equipped with two imported fans, wind machine room and microcomputer control cabinet as a whole, the wind machine room outlet pipe and the equipment inlet pipe connected to the distance of not more than 15 meters.





Process Description

- ◆ Hospital sewage refers to hospitals at all levels of general hospitals, specialized hospitals, infectious disease hospitals and other medical institutions discharged sewage, its water quality with the nature of different hospitals, scale and the region in which it is located and different. The source and composition of hospital sewage is complex, containing pathogenic microorganisms, toxic, harmful physical and chemical pollutants and radioactive pollution, etc., with the characteristics of space pollution, acute infections and latent infections, etc., which will become an important pathway for the proliferation of epidemics and serious pollution of the environment if not dealt with effectively.
- ◆ Buried integrated hospital sewage treatment equipment is based on A/O biochemical process, set biodegradation sewage settlement, oxidation disinfection and other processes in one, removal, $\text{NH}_3\text{-N}$, E. coli flora and other efficient sewage treatment equipment. Equipment structure is compact, occupies little space, all set in the ground, operating economy, strong resistance to shock concentration, high processing efficiency, management and maintenance is convenient, by the user, the performance of the equipment have reached the relevant national standards.



Representative Processes

Equipment Characteristics

- ◆ It can be buried below the surface of the ground, and the upper part of the equipment is planted with flowers, trees and lawns, or it can be set indoors.
- ◆ High degree of automation of the equipment, no need for professional management.
- ◆ Easy operation, convenient maintenance, new technology, good effect, long service life.
- ◆ Low running cost of the equipment.

Scope of application

- ◆ Processing water: 1.0 ~ 50.0m³/h, greater than 50.0 (m³/h) need to be designed separately.
- ◆ Applicable to first-class hospitals, second-class hospitals, third-class hospitals, nursing homes, township health centers, community health service centers, central blood stations, private hospitals, specialty hospitals, dental hospitals and so on.





Product Overview

- ◆ Livestock and poultry farming vigorously development brought about by the increasingly serious environmental pollution problems, wastewater contains a large number of pollutants, such as CODcr, ammonia, nitrogen, heavy metals, residual veterinary drugs and a large number of pathogens, etc., such as without treatment directly discharged, it will cause serious pollution. Its main treatment method is to use the more mature biochemical treatment technology - biological contact oxidation method.

Process Introduction

- ◆ Catch Basin: A treatment facility that utilizes the principles of sedimentation and anaerobic fermentation to remove suspended organic matter from domestic wastewater.
- ◆ Solid-liquid separator: solid-liquid separator is based on the centrifugal separation principle and is used to separate precipitable solids from liquids. The unique internal accelerating motion produces a high-speed rotating vortex, which in turn separates solid impurities from liquids with high efficiency.
- ◆ Adjustment pool: sewage into the equipment before setting up the adjustment pool to adjust the quality of sewage water, water quality, adjusting the pool inlet to set up the grid box to intercept large particles in the sewage debris to ensure that the pump operates normally.

- ◆ Anaerobic tank: The anaerobic tank has a high amount of activated sludge, which has effective adsorption and removal ability for SS and all kinds of organic matter, at the same time, the large molecules of organic matter in the water are decomposed into small molecules under the action of anaerobic/parthenobarbic bacteria, so as to improve the biochemical nature of the sewage.
- ◆ Aerobic tank: the biochemical section mostly adopts A/O process, the main role of A/O tank is to remove the organic matter and ammonia nitrogen and other pollutants in the incoming water. A tank is a pre-denitrification tank, the heterotrophic denitrifying bacteria in the A tank use the organic matter in the incoming water as a carbon source, and reduce NO₃-N and NO₂-N in the reflux mixture to N₂, so as to reduce the total nitrogen in the wastewater. The aerobic microorganisms in the activated sludge of the O tank degrade the organic matter in the wastewater into CO₂ and H₂O under the oxygen condition. The aerobic microorganisms in the activated sludge in the O-tank degrade the organic matter in the sewage into CO₂ and H₂O under aerobic conditions; and the chemoenergetic autotrophic nitrifying bacteria oxidize the organic nitrogen and ammonia nitrogen in the sewage into NO₃-N and NO₂-N, thus removing the COD and ammonia nitrogen in the sewage. The NO₃-N and NO₂-N in the wastewater is returned to the A tank for denitrification reaction through the mixed liquid reflux pump.
- ◆ Two sedimentation tank: after biochemical sewage into the two sedimentation tank, two sedimentation tank design surface load of 0.6-1.2 m³ / m².d two sedimentation tank for lifting adjustable level, tooth-shaped water collection tank, its tank accumulation of water uniform sedimentation effect is better, the two sedimentation sludge pump to the sludge tank.
- ◆ Clear Pond: After anaerobic, aerobic and sedimentation treatment, the sewage enters the clear pond and is discharged after clear water storage.
- ◆ Sludge tank: the dirt intercepted by the grille and the sludge of the second sedimentation tank enter the sludge tank, which is equipped with a sludge nitrification system, and the supernatant of the sludge tank flows back to the regulating tank.
- ◆ Disinfection pool: disinfection pool using chlorine dioxide disinfection, equipped with chlorine dioxide generator can be automatically added according to the amount of water.
- ◆ Wind machine room, automatic control cabinet: wind machine room is set up separately, equipped with aeration fan, wind machine room and microcomputer control cabinet as a whole, the wind machine room outlet pipe and the equipment into the air pipe connection, the distance between them does not exceed 15 meters.



Wastewater characteristics

- ◆ Slaughtering wastewater comes from pen rinsing, drenching, slaughtering and other plant floor rinsing, scalding, dissecting, by-product processing, oil washing and so on. Through the source of its water quality, we can know that the wastewater mainly contains blood, grease, broken meat, bone residue, hair and feces, etc. The wastewater is brownish-red and has a strong fishy odor. The content of organic suspended solids is high and easy to rot, discharged into the water body will consume the dissolved oxygen in the water, destroy the ecosystem and pollute the environment.

Process Introduction

- ◆ Grating well: set up mechanical grating or artificial grating to remove floating, suspended and large particles in the water to intercept large particles of debris in the sewage to ensure the normal operation of the pump.
- ◆ Adjustment pool: in the adjustment pool to adjust the quality of sewage water, water quantity, to prevent changes in water quality and water quantity, the impact of subsequent treatment.
- ◆ Air flotation machine: air flotation machine is the use of small bubbles or tiny bubbles to make the impurities in the medium float out of the water surface machine. The body of water contains a number of specific gravity close to the water of the fine impurities by its own weight is difficult to sink or float can be used in the air flotation device.
- ◆ Anaerobic process: The anaerobic process utilizes the microorganisms of the anaerobic process to hydrolyze organic matter into non-polluting carbon dioxide

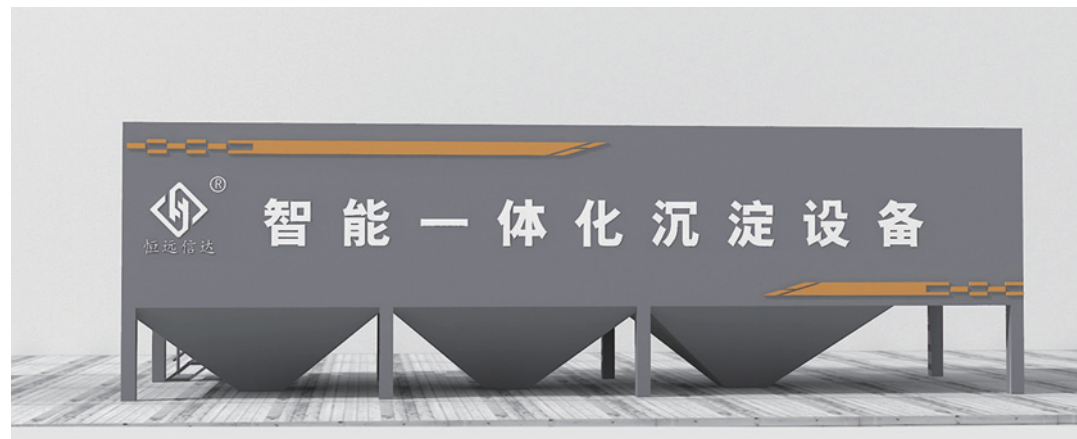
and water with high efficiency and low consumption, and to produce methane. Under anaerobic conditions, the anaerobic process can be simplified into a hydrolysis stage, an acidification stage, an acetic acid production stage, and a methane production stage in terms of the main roles of the microbial populations and the main forms of organic matter. In the four stages of anaerobic biological reaction of sewage, there are also great differences in the populations of organisms involved. Anaerobic wastewater biodegradation treatment is a very important treatment of industrial wastewater, which has the advantages of low energy consumption, energy recovery in wastewater, etc., and is currently used in ultra-high concentration wastewater (such as anaerobic digestion of sludge, difficult aerobic degradation of high-concentration industrial wastewater). At present, the main popular anaerobic processes are UASB, EGSB, TWT-IC and so on.

- ◆ Aerobic tank: the core part of sewage treatment, in the higher organic load, through the attachment of a large number of different species of microbial communities on the filler to participate in the biochemical degradation and adsorption, remove a variety of organic substances in the sewage, so that the sewage content of organic matter is greatly reduced. In the case of low organic load, through the role of nitrifying bacteria, in the conditions of sufficient oxygen degradation of ammonia nitrogen in the sewage, but also make the COD value in the sewage reduced to a lower level, so that the sewage can be purified.
- ◆ Two sedimentation tank: after biochemical sewage into the two sedimentation tank, two sedimentation tank design surface load of $0.6-1.2 \text{ m}^3 / \text{m}^2 \cdot \text{d}$ two sedimentation tank for lifting adjustable level, tooth-shaped water collection tank, its tank accumulation of water uniform sedimentation effect is better, the two sedimentation sludge pump to the sludge tank. Clear Pond: After anaerobic, aerobic and sedimentation treatment, the sewage enters the clear pond and is discharged after clear water storage.
- ◆ Sludge tank: the dirt intercepted by the grille and the sludge of the second sedimentation tank enter the sludge tank, which is equipped with a sludge nitrification system, and the supernatant of the sludge tank flows back to the regulating tank.
- ◆ Disinfection pool: disinfection pool using chlorine dioxide disinfection, equipped with chlorine dioxide generator can be automatically added according to the amount of water.
- ◆ Wind machine room, automatic control cabinet: wind machine room is set up separately, equipped with aeration fan, wind machine room and microcomputer control cabinet as a whole, the wind machine room outlet pipe and the equipment into the air pipe connection, the distance between them does not exceed 15 meters.

Horizontal sedimentation tank

Product Overview

- ◆ Advection sedimentation tank also called slant pipe sedimentation tank is a sedimentation tank with slant pipe in the sedimentation area. There are two types of assembly forms: inclined pipe and branch pipe. In the advection or vertical flow sedimentation tank sedimentation area using inclined parallel pipe or parallel pipe (sometimes can use honeycomb packing) divided into a series of shallow sedimentation layer, the treated and settled sedimentation sludge in the shallow layer of each sedimentation and separation of each other's movement.

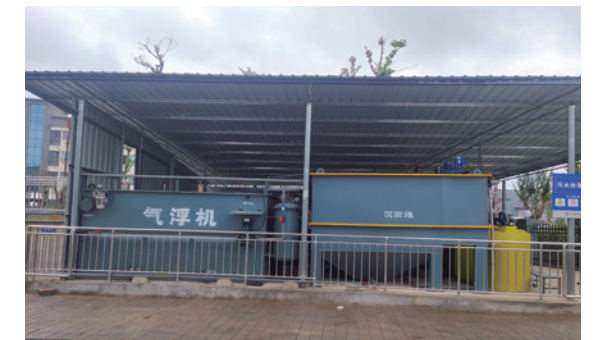


Product Features

- ◆ The adoption of the laminar flow principle improves the treatment capacity of the sedimentation tank.
- ◆ The particle settling distance is shortened, thus reducing the settling time.
- ◆ The settling area of the settling tank is increased, thus improving treatment efficiency.
- ◆ High removal rate, short residence time, small footprint.

Technical Parameters

- ◆ The spacing between the inclined plate (pipe) is generally not less than 50mm, and the length of the inclined plate (pipe) is generally about 1-1.5m.
- ◆ The upper layer of the inclined plate should have a water depth of 0.5-1.0 m, and the height of the bottom buffer layer is 1.0 m. The inclined plate (pipe) is the wastewater distribution area, and the general height is not less than 0.5 m. The lower part of the water distribution area is the sludge area.
- ◆ The effluent is generally collected by a multi-row orifice pipe, and the orifice should be 2cm below the water surface to prevent floating objects from being taken away.
- ◆ The flow rate of wastewater in the inclined pipe depends on different wastewater, such as the treatment of domestic sewage, the flow rate is 0.5-0.7mm/s.
- ◆ The inclined plate (tube) is at an angle of 60° with the horizontal plane, and the net distance of the inclined plate (or the diameter of the inclined tube aperture) is generally 80-100mm.



Vertical flow sedimentation tank

Product Overview

- Vertical flow sedimentation tank, also known as vertical sedimentation tank, is a vertical flow of wastewater in the pool sedimentation tank. Pool body plan is circular or square, water from the center of the pool inlet pipe from top to bottom into the pool (pipe flow rate should be less than 30mm / s), pipe under the umbrella-shaped baffle so that wastewater in the pool after the uniform distribution of the entire water cross-section of the slow ascent of the suspended solids settled into the bottom of the pool conical sedimentation hopper, the clarified water from the pool around the periphery along the periphery of the overflow weir outflow.



Technical Parameters

- In a vertical flow sedimentation tank, the sewage is made to flow vertically from the top downward at a flow rate v . The suspended particles in the sewage have the following three states of motion:
- When the particle sedimentation velocity $u > v$, then the particles will precipitate downward with the difference of $u - v$, and the particles can be removed;
- When $u = v$, the particles are in a random state, neither sinking nor rising;
- When $u < v$, the particles will not settle and will be carried away by the rising current.

Product Features

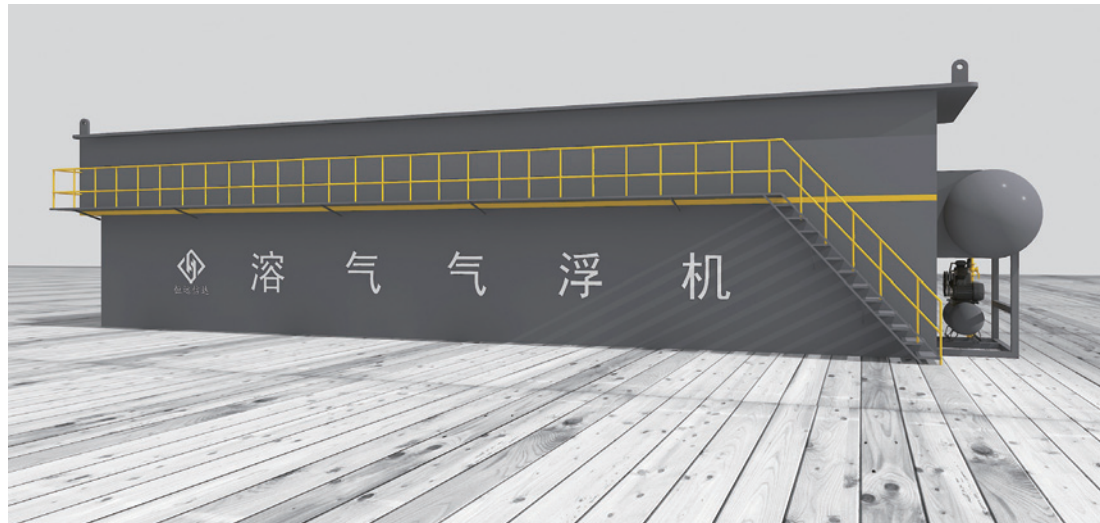
- Improved efficiency of sewage treatment

The role of vertical flow sedimentation tank is to carry out the preliminary separation of sewage solids and liquids. Sewage first through the inlet into the vertical flow sedimentation tank, in the surface after gravity precipitation and biological reaction, solid impurities are precipitated to the bottom of the tank, while the clear water from the top of the tank outflow, after subsequent processing for further purification. Compared with the traditional horizontal flow sedimentation tank, the vertical flow sedimentation tank has higher sedimentation efficiency and better treated water quality, which can effectively remove suspended particles, organic, nitrogen, phosphorus and other pollutants, and ensure that the effluent meets the national emission standards.

- Reduced investment costs

The advantage of vertical flow sedimentation tank is not only to improve the efficiency of wastewater treatment, but also a significant feature is to reduce investment costs. Compared with the traditional biological tank and sedimentation tank separation process, vertical flow sedimentation tank can realize the "one-stop" treatment, not only saves the equipment footprint, but also saves the investment cost of building facilities. In addition, its operating costs are also lower, do not need to be repeatedly regulated as in the traditional process, more stable and reliable.

Dissolved air flotation machine



Product Overview

- ◆ Dissolved air flotation machine in the process of sewage treatment to produce a large number of micro-fine bubbles, so that the air in the form of highly dispersed micro-bubbles attached to the suspended particles, resulting in a density of less than the state of water, the use of the principle of buoyancy to make it float on the surface of the water, so as to realize the solid-liquid separation of water treatment equipment. Currently in the water supply, industrial wastewater, breeding sewage, slaughtering wastewater, food processing, and urban wastewater treatment and other aspects are widely used.

Technical Parameters

- ◆ Air flotation equipment can be divided into: 5, 10, 20, 30, 40, 50, 60, 80, 100, 150, 200, 250, 300, 500m³/h and other specifications according to the treatment capacity, can also be designed according to user needs.

Product Features

- ◆ Stable and reliable treatment effect, high concentration of scum, low mud production, easy to dewater.
- ◆ Advanced technology, equipped with high-efficiency dissolved air system is durable and easy to use and maintain.
- ◆ Aeration to the water during air flotation has an obvious effect on removing surfactant and odor in the water, and at the same time, due to aeration, the dissolved oxygen in the water is increased, which provides favorable conditions for subsequent treatment.
- ◆ For low-temperature, low turbidity, algae-containing water sources, the use of air flotation method can achieve the best results.



Hainan Lingshui - Bullfrog Farming Sewage Treatment Project



Chenzhou, Hunan - Chemical Plant Sewage Treatment Project

Concave air flotation machine

Product Overview

- ◆ Vortex air flotation machine is an excellent sewage treatment technology, rational design, convenient operation, economic operation, it is generated by the air bubbles, directly from the wastewater to remove solid suspended solids, grease, colloidal substances and other impurities.
- ◆ Vortex aeration machine will be "micro-bubbles" directly into the sewage without prior dissolved air, and then through the diffuser impeller "micro-bubbles" evenly distributed in the sewage, so the entire operation process will not occur obstruction phenomenon.
- ◆ Vortex air flotation machine is mainly composed of box, aerator, scraping system, etc., without pressure dissolved gas, air compressor and circulating pump and other equipment. Untreated sewage firstly enters into the aeration area and mixes well with micro bubbles, which bring the solid suspended matter to the water surface in the process of rising, and the mud scraper runs along the liquid surface to scrape the suspended matter to the tilted metal plate, and then pushes it into the sludge discharge pipe chute, which flows into the sludge collector through the sludge discharge pipe chute.
- ◆ The purified wastewater passes through an overflow tank below the inclined plate before discharge. The overflow tank is used to control the water level in the air floatation tank to ensure that the liquid in the tank does not flow into the sludge discharge pipe, and the open throat flow pipe extends from the aeration section along the bottom of the air floatation tank. While generating micro-bubbles, the swirl aerator creates a negative pressure zone at the bottom of the tank with the return pipe. This negative pressure effect causes the wastewater to flow from the bottom of the tank back into the aeration zone and then back into the air flotation section. This process ensures that the air flotation continues without an incoming flow.



Product Features

- ◆ This equipment is best adapted to the pre-treatment of all kinds of sewage and as the first air flotation stage of multi-stage air flotation treatment of sewage. It has obvious effect on removing fat and solid suspended matter, and has the ability to remove grease and sludge at the same time, which is an indispensable key equipment in sewage treatment engineering.
- ◆ Highly adaptable to changes in water quantity and quality.
- ◆ Investment saving: advanced treatment technology, high treatment efficiency, good quality of effluent water. The air flotation equipment does not need pressure vessels, air compressors, circulating pumps and jets.
- ◆ Affordable: the air flotation equipment for the integration of skid-mounted equipment, installation is relatively simple, with the supporting civil engineering less, the equipment can be installed on the ground, underground or high places.
- ◆ Low operating costs: the air flotation equipment requires less power, simple operation and maintenance, without more labor.
- ◆ Good effect: This air flotation equipment can remove sludge from wastewater automatically and continuously with low sludge water content, which reduces the sludge treatment cost.

Vertical flow air flotation machine



Product Overview

- ◆ Air flotation contact system air flotation tank body for the round steel structure, is the main body and core of the air flotation machine, the internal by the releaser, homogenizer, sewage pipe, water pipe, river mud tank, scraping board system and so on. The releaser is placed in the central position of the air flotation bubble body, it is the key part of releasing the emblematic bubbles, the saturated dissolved gas water of the first gas tank is suddenly released to form the micro-bubbles with a diameter of about 20-80um. Equalizer to the shape of the structure, connected to the building on the release of skin, the main role is to separate the water and sludge evenly spread in the tank. The outlet pipe is distributed in the lower part of the tank and connected to the upper part of the bubble body through an upright main pipe, and the indiscriminate outlet is equipped with a water level adjusting handle, which is convenient for adjusting the water level in the tank. The sludge pipe is installed at the bottom of the tank for discharging the sediments deposited at the bottom, the upper part of the tank is equipped with a scum tank, the scum scraper rotates continuously, the lead plate continuously scrapes the scum into the scum tank, and the scum flows out of the tank, the whole air flotation system is integrated with the water intake, flocculation, separation, water collection, water discharge, and there is not a stable flow chamber or a dissolved gas release chamber in the equipment, so as to make the treatment performance more stable and the effect

more superior, and is especially suitable for the reconstruction of traditional equipments.

- ◆ Stabilization chamber: through the mixing reaction of the raw water into the air flotation tank body flow rate is very high, if direct contact with the dissolved air water will dissipate small bubbles, affecting the effect of bubble adhesion flocculation, if you add a stabilization chamber, so that the turbulent kinetic energy of the raw water to consume the water at a uniform speed into the dissolved air water release chamber, thus ensuring that the dissolved air water is fully mixed with sewage in contact.
- ◆ Dissolved air release chamber: The dissolved air release chamber and separation chamber are in one tank, separated in the middle. Dissolved air water and flocculated sewage adheres here, slowly rises and enters into the air flotation separation chamber, which ensures the contact space and time between flocculated body and tiny bubbles and improves the efficiency of dissolved air water release.

Product Features

- ◆ Large treatment capacity, high efficiency, small area, and can eliminate sludge expansion. The process and equipment are simple and easy to use and maintain.
- ◆ Compared with other air flotation methods, it has the advantages of high water loading and compactness.
- ◆ It is possible to remove the SS that can float and sink the SS with high density.
- ◆ Air flotation has the role of oxygenation to the water, the removal of surfactants and odor in the water has an obvious effect, due to the increase in the dissolved oxygen in the water, reducing some of the insoluble COD, for the subsequent treatment to provide favorable conditions.



Shallow air flotation machine



Product Overview

- ◆ High-efficiency shallow air flotation machine is the use of small bubbles or tiny bubbles to make the impurities in the medium float out of the water surface machine. In the water supply and drainage treatment process program, solid and liquid separation technology and its equipment is one of the key processes. For the specific gravity close to the water of the tiny suspended particles to go, air flotation is the most effective method. This equipment is designed by successfully applying "shallow pool theory" and "zero speed" principle, and it integrates flocculation, air flotation, slag skimming, sedimentation and mud scraping, which is a kind of high-efficiency and energy-saving water purification equipment and is widely used in water supply and drainage treatment projects.
- ◆ The main structure of the shallow air flotation machine: the main machine of the high-efficiency shallow air flotation equipment refers to the separation part of the air flotation equipment, which includes: the pool body, the scum collection device, the overflow adjustment device, the rotating water inlet and water distribution mechanism.

Equipment Principle

- ◆ The use of zero-speed principle - water from the center of the pool into the water, water pipe clockwise rotation, the water from the pipe reverse spray; water relative to the pool wall speed close to zero speed, no stirring of the water in the pool, so that the particles in the water in the static upward or settlement, high degree of purification, the removal rate of suspended solids up to 90% or more.
- ◆ Utilizing the shallow pool theory - the water depth is typically 600-700mm - the uplift path is short, low resistance and fast.
- ◆ Utilizing the theory of dissolved air - the use of higher pressure dissolved air tube, unit dissolved air efficiency is high, up to 90%, air flotation effect is good.

Product Features

- ◆ Water velocity is low a water relative to the pool wall speed is close to zero speed, no stirring of the water in the pool, so that the particles in the water in the static floating or settling, high degree of purification, suspended solids removal rate of 91% or more.
- ◆ Dissolved gas utilization rate is high one by one using higher pressure dissolved gas tube, unit dissolved gas rate up to 90%, air flotation effect is good.
- ◆ Floating without interference a water depth is generally 650mm: floating path is short, low resistance, fast speed. Reasonable slag removal hopper-spiral slag hopper slag removal stirring is small, the effect is good.

Scope of Application

- ◆ With advanced design and excellent performance, this equipment is widely used in the sewage treatment system of petroleum, chemical, iron and steel, tannery, electric power, textile, food, brewing, municipal and other industries, and is an alternative to the traditional air flotation equipment.

Integrated water purification equipment

Product Overview

- ◆ All-in-one water purification equipment integrates seven main units: water distribution, mixing, flocculation, filtration, water collection, mud collection and automatic backwashing, which can effectively remove impurities, suspended solids, algae and microorganisms in the water, as well as odor and iron and manganese, which is equivalent to a water purification station with a full set of purification and treatment functions, and is also the first choice of the water treatment industry as an ideal and reliable water purification station.

Equipment Principle

- ◆ Integrated water purification equipment integrated mixing, flocculation (reaction), precipitation, filtration, dosing, disinfection and other water purification processes in one, the entire water purification process in the water plant miniaturization, equipment; also according to the different needs of the actual project and the different uses of the water quality, appropriate assembly or splitting.
- ◆ Small-scale water purification equipment drastically improves the process of mixing, flocculation and sedimentation, and can replace existing small-scale water purifiers to meet the water needs of small-scale people.
- ◆ The basic structure of integrated water purification equipment includes: the main water purification equipment (including mixer, flocculation device, sedimentation device, filtration device), dosing device, disinfection device, automatic control system and so on.



Product Features

- ◆ Strong resistance to shock load, stable and excellent water quality.
- ◆ It can adapt to changes in water quality and quantity, and can be operated intermittently or continuously with stable processing performance.
- ◆ It has very good effect on different water systems and water quality in different places, and can be applied to raw water purification, water reuse and physical treatment of sewage (waste) water.
- ◆ High degree of automation, can realize unattended.
- ◆ Small amount of infrastructure, put into production quickly, easy to combine and support, conducive to the phased construction of the project.

Scope of Application

- ◆ It is suitable for the treatment of industrial water and drinking water with rivers, lakes and seawater as the water source, and can also be used for the physical and chemical treatment of sewage or wastewater and the reuse of water. It can be used for small-scale water use in the industries of drinking water in villages and towns, electric power, petroleum, chemical industry, coal, metallurgy, electronics, food, textile, inland waterway ship, field operation, etc. The treatment capacity is from 1t/h to 200t/h, which can satisfy the demand of water use in towns and cities.

Ultrafiltration membrane water purification equipment



Product Overview

- ◆ Ultrafiltration technology is a membrane separation process with sieving as the separation principle and pressure as the driving force, the filtration precision is within the range of 0.005-0.1 μ m, which can effectively remove particles, colloids, bacteria and macromolecular organic matter in water. It can be widely used in separation, concentration and purification of substances. The ultrafiltration process has no phase transformation, good temperature resistance, acid and alkali resistance and oxidation resistance. The ultrafiltration membrane adopts different forms of formation, membrane materials and process design, which can adapt to different water quality conditions and separation functions.
- ◆ In the ultrafiltration process, the water deep liquid in the pressure to promote, flow through the membrane surface, smaller than the membrane pore of the deep agent (water) and small molecules of solute permeable membrane, become purified liquid (filtrate), than the membrane pore of solute and solute group is retained, with the discharge of the water flow, become the deep shrinkage of the liquid. Ultrafiltration process is dynamic filtration, separation is completed in the flow state. The solute is only limited deposition on the membrane surface, the ultrafiltration rate decays to a certain degree and tends to equilibrium, and can be restored by cleaning.

Product Features

- ◆ The separation process has no phase change and therefore saves energy.
- ◆ The separation is carried out at room temperature and is suitable for the concentration and purification of some heat-sensitive substances (e.g. juices, pharmaceuticals, biological preparations).
- ◆ Series of ultrafiltration membranes for molecular weight classification of multi-component macromolecular solution systems.
- ◆ The equipment is simple and easy to operate, manage and maintain.
- ◆ Ultrafiltration is a homogeneous continuum made of polymers, and the membrane itself is free from any debris or particles shed during use.

Scope of Application

- ◆ Ultrafiltration membrane as a very widely used membrane technology in the field of water treatment, can be used in surface water treatment, drinking water purification, food, beverage treatment, sewage, wastewater treatment and other fields.



Activated carbon filter



Working Principle

- ◆ The work of the activated carbon filter is done through the carbon bed. The activated carbon particles that make up the carbon bed have a very large number of micropores and a huge specific surface area, which have a strong physical adsorption capacity. When water passes through the carbon bed, the organic pollutants in the water are effectively adsorbed by the activated carbon. In addition, there are some oxygen-containing tubular energy groups on the non-crystallized part of the surface of the activated carbon, so that the organic pollutants in the water passing through the carbon bed are effectively adsorbed by the activated carbon.
- ◆ Can adsorb organic matter, bacteria, colloidal particles and microorganisms in water. It can adsorb non-metallic substances such as chlorine, ammonia, bromine and iodine. Can adsorb metal ions such as silver, arsenic, bismuth, cobalt, hexavalent chromium, mercury, antimony, tin and other ions.

Performance Characteristics

- ◆ It can reduce the odor, color, chlorine and other harmful substances in the water, making the water cleaner and fresher.
- ◆ It does not need external energy, and relies only on its own physical adsorption and chemical adsorption to achieve the purpose of water purification, which makes the operation cost lower.
- ◆ The activated carbon particles of the activated carbon filter can be cleaned, recycled and reused, so it has a long service life.

Scope of Application

- ◆ Activated carbon filter is widely used in food, medicine, electronics, chemical industry, industrial wastewater and other industries in the water treatment project, is the pretreatment equipment in the process of water treatment, used to prevent contaminants in the water on the subsequent equipment, can also be used to improve the odor and color of the water.



quartz sand filter

Product Overview

- ◆ Quartz sand filter is to pass the water to be filtered through the filter layer to achieve the purpose of filtration after the pump is pressurized. Quartz sand filtration can be used for pretreatment of ion exchange softening and desalination system, pre-filtration of reverse osmosis device; filtration of domestic and industrial sewage and wastewater as well as coarse filtration of industrial water supply and swimming pool water filtration, etc. The specification of the particle size of the filter media depends on the requirements of the water quality.



Scope of Application

- ◆ It can be used in the pretreatment of softening and desalination system of ion exchange method, the pre-filtration of reverse osmosis device; filtration and treatment of domestic and industrial wastewater and coarse filtration of industrial water supply and swimming pool filtration, etc., and the specification of the particle size of the filtering material depends on the requirements of the water quality.

Working Principle

- ◆ The quartz sand filter cartridge is arranged with filter media of different particle sizes, compacted from bottom to top according to size. When the water flows from the top to the bottom of the filter layer, the suspended matter contained in the water flows into the tiny pores formed by the upper layer of filter media, and is subjected to adsorption and mechanical obstruction of flow, and the suspended matter is retained by the surface layer of the filter media.
- ◆ At the same time, these retained suspended matter between the "overlap" and "bridging" occurs, the formation of a thin film on the surface of the filter layer, continue to filter. This is the so-called membrane filtration effect on the surface of the filter media.
- ◆ This film filtration effect not only exists in the surface layer, but also when the water enters the middle layer of filter media to produce this retention effect. Unlike the membrane filtration effect in the surface layer, this intermediate retention is called permeation filtration.
- ◆ In addition, because the filter media are closely arranged with each other, the suspended particles in the water flow through the filter media particles formed by the curved aperture, there are more opportunities and time and the surface of the filter media with each other collision and contact, so that the suspended solids in the water red filter media particles flocculation on the surface of each other to adhere to each other, the occurrence of contact coagulation effect.
- ◆ The working principle of filtration is to purify the water through the process of membrane filtration - osmosis filtration - contact coagulation.

Stacking screw machine



Product Overview

- Stacked screw machine, short for stacked screw sludge dewatering machine, is a kind of water treatment system widely used in municipal wastewater treatment projects as well as petrochemical, light industry, chemical fiber, papermaking, pharmaceutical, leather and other industrial industries. The actual operation situation proves that the stacked screw sludge dewatering can create considerable economic and social benefits for customers.

Principles of construction

- The main body of the dewatering machine consists of a stack of fixed and moving rings, with a screw shaft running through it to form a filtering device. The front section is the thickening section and the rear section is the dewatering section. The filter slit formed between the fixed and moving rings and the pitch of the screw shaft are gradually reduced from the concentrating section to the dewatering section. The rotation of the screw shaft drives the sludge from the thickening section to the dewatering section, and at the same time, it also drives the travelling ring to clean the filtering slit to prevent clogging. It is composed of device, discharging device, air control system, electric control system and so on.

Working Principle

- Concentration:** When the spiral propeller shaft rotates, the multiple solid and active stacks located at the periphery of the propeller shaft move relative to each other, and the water is filtered out from the gap of the relative moving stacks under the action of gravity, realizing rapid concentration. Under the effect of gravity, water is filtered out from the gap of the relatively moving stacks, realizing rapid concentration.
- Dewatering:** the thickened sludge moves forward with the rotation of the spiral shaft; along the direction of the mud cake outlet, the pitch of the spiral shaft gradually becomes smaller, and the gap between the ring and the ring gradually becomes smaller, and the volume of the spiral cavity shrinks continuously; under the action of the back pressure plate at the outlet, the internal pressure gradually strengthens, and under the continuous operation of the spiral propelling shaft in order to propel it, the water in the sludge is squeezed and discharged, and the solids content of the filter cake is constantly rising, and the continuous dewatering of sludge is realized at last.
- Self-cleaning:** the rotation of the spiral shaft pushes the swimming ring to rotate continuously, and the equipment relies on the movement between the fixed ring and the swimming ring to realize the continuous self-cleaning process, thus cleverly avoiding the clogging problem commonly found in traditional dewatering machines. Thus, it skillfully avoids the clogging problem commonly found in traditional dewatering machines.

Scope of Application

- It is suitable for sludge from municipal sewage, food, beverage, chemical, leather, welding material, paper making, printing and dyeing, pharmaceutical and other industries.
- It is suitable for the dewatering of high and low concentration sludge. When carrying out low concentration sludge dewatering, there is no need to build thickening and storage tanks, which reduces the construction cost, the release of phosphorus and the generation of anaerobic odor.

Plate and frame filter press



Product Overview

- ◆ Plate and frame filter press is mainly composed of fixed plate, filter frame, filter plate, pressing plate and pressing device, and its appearance is similar to chamber filter press. The materials used for manufacturing plates and frames are metal, wood, engineering plastics and rubber, etc., and there are various forms of surface grooves on the filter plate as the liquid discharge pathway, and the filter frame is hollow. Multiple filter plates and frames are arranged alternately, with filter media (such as filter cloth) sandwiched between the plates and frames, and the frames and plates are erected on two horizontal equal beams through two lugs, with a fixed plate at one end and a compression plate at the other end pressed or pulled apart by a compression device during operation. The filter press is charged and discharged by means of channels in the corners of the plates and frames, or by means of lug channels projecting from the sides of the plates and frames. The filtrate is discharged in two ways: open flow and concealed flow. During the filtration process, the filter cake collects in the frame.

Product Features

- ◆ Simple structure, easy operation, stable operation, convenient maintenance; flexible selection range of filtering area, occupying less land; strong adaptability to materials, suitable for a variety of small and medium-sized sludge dewatering treatment occasions. It is suitable for all kinds of small and medium-sized sludge dewatering treatment occasions.
- ◆ No need to use filter cloth and filter paper, reduce the cost of filtration; the use of fully enclosed operation mode, very environmentally friendly, but also no material loss; when the vibration of the slag, can be greatly reduced. When vibration slugging, can greatly reduce the labor intensity to achieve continuous operation.

Working Principle

- ◆ Used for solid and liquid separation. Compared with other solid-liquid separation equipment, filter press filtered mud cake has higher solid content and excellent separation effect. The basic principle of solid-liquid separation is: the mixed liquid flows through the filter medium (filter cloth), the solids stay on the filter cloth and gradually accumulate on the filter cloth to form a filter cake. And the filtrate part penetrates the filter cloth and becomes clear liquid without solids.

Scope of Application

- ◆ Plate and frame filter press is a kind of equipment to realize solid and liquid separation in industrial production, which is used in chemical, ceramics, petroleum, medicine, food, smelting and other industries. It is also suitable for industrial filtration sewage treatment; the hydraulic type is an integrated type of machine, electricity and liquid. Adopting liquid equipment to pressurize, manual mechanical locking to keep pressure.

Belt Filter Press



Product Overview

- ◆ Belt press filter mainly consists of driving device, frame, press roller, upper filter belt, lower filter belt, filter belt tensioning device, filter belt cleaning device, discharging device, air control system, electrical control system and so on.

Product Features

- ◆ Independent thickening section can easily filter the coagulated sludge and greatly increase the treatment capacity.
- ◆ Simple structure, easy to operate and maintain.
- ◆ Special concave-convex roller design, large treatment capacity and low water content. Superior patented filter belt, rapid filtrate separation, excellent sludge cake stripping, less sludge residue.
- ◆ Excellent sludge capture rate and high efficiency. High stability and excellent durability. No noise and vibration. Low power consumption.

Working Principle

- ◆ The dewatering process of belt press filter can be divided into four important stages: pretreatment, gravity dewatering, wedge zone pre-pressure dewatering and press dewatering. After the concentrated sludge and a certain concentration of flocculant are fully mixed in the static and dynamic mixer, the tiny solid particles in the sludge are coagulated into larger floc clusters, and the free water is separated at the same time, and the flocculated sludge is transported to the concentrated gravity dewatering belt, where the free water is separated under the action of gravity to form the non-flowing state of the sludge, and then it is clamped in the upper and lower two mesh belts, and then it passes through wedge pre-pressure zone, low-pressure zone and high-pressure zone by small and large squeezing. Then the sludge is sandwiched between the upper and lower two mesh belts, and under the action of squeezing force and shear force from small to large in the wedge pre-pressure zone, low-pressure zone and high-pressure zone, the sludge is squeezed step by step to maximize the separation of sludge and water, and the final cake is formed and discharged.

Scope of Application

- ◆ It is widely used in sludge dewatering treatment of urban domestic sewage, textile printing and dyeing, electroplating, papermaking, leather, brewing, food processing, coal washing, petrochemical industry, chemical industry, metallurgy, pharmaceutical industry, ceramics and so on, and it is also suitable for solid separation or liquid leaching process of industrial production.



Sludge concentration tank

Product Overview

- ◆ Sludge thickening tank is a kind of equipment by reducing the water content of sludge and reducing the volume of sludge. There are various methods of sludge thickening, such as air-float thickening, gravity thickening, centrifugal thickening, etc., which not only helps to reduce the subsequent treatment costs, but also reduces the difficulties in sludge treatment, utilization and transportation.



Main components

- ◆ Sludge thickening tank is mainly composed of tank body, inner liner, inlet pipe, mud inlet pipe, mud discharge pipe, buoy, level meter and so on.

Concentration method

- ◆ Air flotation thickening method: Air flotation thickening is a method to make the gas dissolved in water released in the form of micro-bubbles, and can be quickly and uniformly attached to the solid particles of sludge, so that the density of solid particles is less than that of water to produce upward flotation, so as to achieve the separation of solid particles and water.
- ◆ Gravity thickening method: Gravity thickening utilizes the relative density difference between solid particles and water in sludge to realize sludge thickening. If gravity thickening is used, the water content can be reduced from 99.2% - 99.6% to 97% - 98%. For sewage treatment plants with primary and secondary sedimentation tanks, these two types of sludge can be mixed for gravity thickening.
- ◆ Centrifugal thickening: The principle of centrifugal thickening method is to utilize the different centrifugal force for thickening with different specific gravity of solid and liquid in sludge. It is suitable for biological and chemical sludge in large and medium-sized sewage treatment plants.
- ◆ Belt gravity thickening method: Belt gravity thickening method is a mechanical thickening method utilizing a belt gravity thickener. The operation is affected by macromolecules in the sludge and operates with high humidity, thus requiring careful operation.

Scope of Application

- ◆ Sludge thickening tank can be used in metallurgical industry for blast furnace, continuous casting, hot rolling and water treatment system such as water plant or for thickening or purification of all solids-containing slurry in coal, chemical, building materials and water, sewage treatment and other industries.

Rotary mechanical grille



Product Overview

- ◆ The company's rotary mechanical grating absorbs the advantages of advanced models at home and abroad and is designed by the grating frame, reducer, transmission chain system, tooth harrow rotary system and electrical control system and other components. Has a compact structure, covers an area of small, stable operation, safety and low consumption, maintenance advantages. Widely used in large and medium-sized water intake structures at the inlet, such as water conservancy power station, waterworks and urban sewage treatment plant pumping stations, sewage and rainwater lifting pumping stations, textile printing and dyeing wastewater, slaughtering wastewater, tannery, paper wastewater, etc. to intercept and remove the floating in the water of coarse debris.

Product Features

- ◆ The grating of rotary mechanical grating is placed in the middle of the traction chain of rake teeth (other mechanical grating is placed under the traction chain), which changes the direction of movement of the rake teeth in the process of clearing and salvaging (opposite to other grating). The movement direction of rake teeth in the clearing process (opposite to other grills) is changed to avoid hard objects being brought into the bottom to jam the rake teeth and traction chain.

- ◆ The equipment adopts rotary traction chain, which is mainly composed of chain plate, chain pin and roller. When running, it is guided by the guide rail on the frame, and the roller makes rolling movement on the guide rail, which eliminates the need of steel wire. Rolling movement, eliminating the trouble of wire rope traction grating decontaminator chaotic rope.
- ◆ The equipment can be adjusted according to the user's need to run the equipment interval time, to realize the periodic operation, according to the grating before and after the liquid level difference automatic control, and manual control function, convenient for inspection. And there is a manual control function, convenient maintenance.
- ◆ The rotary mechanical grating has the advantages of high automation, good clearing effect, low power consumption, no noise, good corrosion resistance, etc., and can ensure continuous and stable operation under the unattended condition. In the case of unattended, it can ensure continuous and stable work, and the daily maintenance work is very little.

Working Principle

- ◆ Rotary mechanical grille including frame, drive variable speed system, drive guide wheel, support wheel and around its rotation of the closed rotary traction chain, rake and grating. In the motor reducer drive, rotary traction chain from the bottom to the top of the rotary movement, when the traction chain on the rake tooth axis running to the grating of the water surface, the rake teeth that is inserted into the grating gap from the bottom to the top of the salvage action, the grating retained on the debris scraped off the rake. As the teeth rake design into a double teeth rake double teeth into an angle, so that when a tooth inserted into the gap in the grating clearing, another tooth with the formation of the encircling situation will be surrounded by solid debris to prevent it from escaping, clearing the high efficiency and thorough. When the rake running to the upper part of the machine, debris by its own weight to fall off the container or conveyor, the debris sent away. At the same time in the design of the debris may enter the traction chain, the traction chain stuck, so the design of the closed traction chain. The underwater shaft assembly is made of stainless steel with nylon bearings, which eliminates the need for daily maintenance of underwater parts.

Microfiltration machine



Product Overview

- ◆ Microfilter is a kind of equipment that can successively and effectively screen out the suspended solids in sewage. The machine has a compact structure, covers an area of small, can successively and automatically sweep away the dirt, and there are a variety of filters to choose from. The machine is suitable for industrial wastewater and daily sewage in solid suspended particles, fibers, lees and other dirt separation. Our company plans the machine filter screen used in inverted trapezoidal section of stainless steel filter cartridges to enhance the corrosion resistance of the screen, coupled with a complete self-cleaning system to ensure that the screen is not clogged.
- ◆ Microfilter is the use of 60 ~ 200 mesh / square inch microporous screen fixed in the drum-type filtration equipment, through the retention of solid particles in the water to complete the solid-liquid separation purification device. And in the filtration at the same time, can through the drum rolling and backwash water force, so that the microporous screen mesh get timely cleaning. So that the equipment always maintains outstanding operating conditions.

Product Features

- ◆ Simple structure, smooth operation, convenient maintenance, long life. Large filtering capacity, high efficiency, general wastewater fiber recovery rate of more than 80%.
- ◆ Occupies less space, low cost, low-speed operation, automatic maintenance, onvenient installation, water and electricity saving.
- ◆ Full-automatic continuous operation, do not need to be supervised, the recovery of fiber concentration of high up to 12% or more.
- ◆ It can replace the thickener and round net dewatering machine by changing the filter of different meshes.

Scope of Application

- ◆ The equipment is widely used in a variety of occasions that require solid-liquid separation. Such as urban sewage, papermaking, textile, printing and dyeing, chemical, food, leather sewage filtration. Especially suitable for white water treatment with papermaking. Reduce the dosage of sewage treatment.



Full bridge mud scraper



Product Overview

- ◆ Full bridge type mud machine adopts the middle water inlet and sludge discharge, peripheral drainage, to ensure uniform water flow, the use of liquid level difference self-absorption sludge discharge with scum scraping and collection of exclusion device and overload protection device, used in sewage treatment plant circular sedimentation tank, full bridge type peripheral drive scraper will be precipitated in the bottom of the pool sludge scraping to the bottom of the pool mud collection pit and will be the surface of the pool floating skimming to the collection of slag hopper.

equipment configuration

- ◆ Full-bridge peripheral drive scraper suction machine, mainly has steel beam, overflow weir, transmission device, flow stabilizing cylinder, center mud tank, mud discharge tank, scraper, mud suction device, scum collection and discharge facilities, power transmission and gas transmission device.

- ◆ Water to be treated from the center cylinder inlet pipe into the water, through the stabilizer cylinder ask willow into the sedimentation tank and then want to spread around the precipitation, clear water from the pool side of the overflow weir out of the pool, in which the sediment has a scraper to concentrate to the suction sludge mouth, by the compressed air disturbed by mixing and increase oxygen, increased sludge spark, according to the principle of connecting tube, the use of the difference between the water level of the bottom of the pool sludge sucked into the mud tank, through the siphon pipe into the center cylinder sludge discharge pipe discharged. At the same time, the sludge in the pool is collected by scraper and discharged out of the pool through the sludge discharge hopper.

Product Features

- ◆ Scraping mud at the bottom of the pool and skimming at the surface of the water. The driving device adopts shaft-mounted gear motor and active roller direct coupling transmission, compact structure, high mechanical efficiency.
- ◆ Parallel staggered line scraper, good continuity, high efficiency of mud collection; stainless steel scraper and then installed under the mud rubber plate, to ensure that the scraping thoroughly clean, there will be no floating mud phenomenon.
- ◆ The slope ratio of the pool bottom is 1:10, so the sludge resistance is negligible when scraping sludge; special hinged structure, strong overload capacity.
- ◆ The main beam is made of square steel with high structural strength, and is hot-dip galvanized and then sprayed with surface paint for strong anti-corrosion performance.
- ◆ Simple operation and remote control.

Half bridge mud scraper



Product Overview

- ◆ Half bridge type peripheral drive scraper is used in round sedimentation tank of sewage treatment plant to scrape and collect the sludge settled on the bottom of the tank to the mud pit, so as to facilitate sludge reflux and thickening and dewatering; and skim the scum on the eating surface to the scum collection hopper, and discharged out of the tank through the scum hopper, so as to facilitate further treatment.

equipment configuration

- ◆ Semi-bridge peripheral drive scraper consists of working bridge, small scraper, flow stabilizing cylinder, scraping truss, overflow device, center support driving mechanism, scraping board, collector, electric control box.
- ◆ The working bridge is driven by the drive mechanism installed in the periphery, rotating around the center support installed in the center pier of the pool, and a set of scraping boards installed on the working bridge scrape the sludge settled in the bottom of the pool to the mud pit in the center of the pool in the process of rotation. At the same time, the scum on the liquid surface is concentrated in the tapering area formed by the scum scraper and the peripheral slag weir, and there is a scum scraper rake raking to the slag hopper, which is discharged to the outside of the pool.

Product Features

- ◆ Simple structure and light weight: due to the truss structure and only one set of driving structure, the weight is greatly reduced.
- ◆ Simple and convenient maintenance, low running cost.
- ◆ New type of transmission mechanism, reducer adopts shaft-mounted type, high efficiency. Traveling wheel adopts standard solid tire, compact structure, easy installation.
- ◆ Electrical components are outdoor type, safe and reliable, can be controlled randomly or remotely.
- ◆ According to the user's needs, the walking wheel can be rubber wheel, nylon wheel, steel wheel, can be manufactured according to the user's specific size. The parts contacting with water can also be made of stainless steel. Stainless steel is also available.



Inner Mongolia Chifeng Enterprise Sewage Treatment Project



Anhui Yuexi Sewage Treatment Plant Project



Wuhan, Hubei 500 tons/day sewage treatment project



Anhui Langxi 500 mt/d domestic wastewater treatment project



Wastewater Treatment Plant Project in Lanzhou New Immigrant Area



Jiangxi Jiujiang Enterprise Sewage Treatment Project



Shaanxi Baoji Expressway Service Area Sewage Treatment Project



Tibet Mountaineering Training Camp Domestic Sewage Treatment Project



Hubei Enshi New Rural Sewage Treatment Project



Shaanxi oil depot domestic wastewater treatment project



Shandong Zibo cattle farm sewage treatment project



Hebei Shijiazhuang Photovoltaic Power Station Sewage Treatment Project



Shanxi Jincheng Wastewater Treatment Plant Project



Hubei Yichang Slaughterhouse Wastewater Project



Liaoning Fushun 720-ton water plant project



Hubei Huangshi 4800 square meters water purification project



Wastewater Treatment Plant Project in Nomohon Farm, Qinghai Province



Anhui Hefei New Rural Solar Sewage Treatment Project



Wuhan 6000 square meters river water purification project



Jiangsu Nantong 5500 square meters water purification project



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