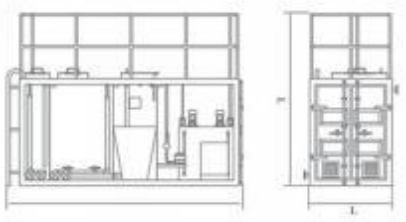
Integrated sewage treatment equipment:

Construction and principle

The WSZ type equipment has all its facilities housed in several tanks. The tanks are made of materials as specified by the user, and they are connected using (stainless) steel pipes or ABS pipes. The tanks are coated with ethylene anti-corrosion paint recommended by the Ministry of Chemical Industry, which typically provides a corrosion resistance lifespan of over 10 years. The WSZ type equipment is primarily used for treating domestic sewage and similar industrial organic wastewater, employing biological treatment technology through contact oxidation.



Equipment features

- The equipment can be fully buried, semi-buried or placed above the surface without being arranged in the standard form, and set according to the needs of the terrain
- The equipment is buried and does not occupy the surface area, and no building or heating insulation facilities are required
- Micro-pore aeration uses the membrane pipeline oxygenator produced by German Oter System Engineering Co., Ltd. It is not clogged, has high oxygenation efficiency, good breathing effect and energy saving
- Small footprint, low investment and low operating costs
- Equipped with automatic control system
- New process, good effect, less sludge; easy operation and maintenance; low noise, can run continuously for more than 10 years

application scenarios

- New rural construction, decentralized sewage treatment in rural areas;
- Airports, high-end residential areas, hotels, scenic spots, highway toll stations, service areas, etc.;
- Food processing industry;
- Metal products industry
- Small and medium scale farming;

Technical parameters

Model/Name		WSZ-F						
		0.5	1	3	5	10	20	30
Processing		0.5	1	3	5	10	20	30
Fan	model	HC-25S		HC-40S	HC-50S	HC-80S	HC-80S	HC-100S
	Power	0.55		1.5		4	4×2	5.5×2
Water pump	model	AS10-2CB		AS10-2CB		AS10-2CB	AS16-2CB	
	Power	1.1					22	
inlet	BODsmg/L	150-400						
efflue	BODsmg/L	20-60						
equipment size (mm)	H	1500	1900	2400	2700	2600	2700	3000
	H1	1000	1300	1800	2100	1800	1900	2100
	H2	1000	1300	1700	2100	1900	1900	2300
	DN1	80	80	80	80	100	100	100
	DN2	80	80	100	100	100	125	125

HZ type rotary tooth rake bar screen cleaner

Construction and principle

The device is made of ABS engineering plastic nylon or stainless steel special shaped teeth,

The closed toothed rake chain is assembled on the online rake shaft in a certain order to cover the whole front

The water surface forms a unique grid structure, and the lower part of the chain is submerged in the water channel for driving

Under the uniform speed drive of the device, the whole toothed plate runs from bottom to top and carries solid debris from

The liquid is separated out, and the fluid flows through the gaps in the rake as it moves

When the grating cleaner is on the upper part, the front and rear tooth rakes are guided by the sprocket and bent rail

Relative self-cleaning movement is generated between them, which promotes debris to fall off to the conveying grid waste equipment by gravity

It is placed in the hopper. The equipment mainly consists of motor reducer, frame, rotary grating and rotary machine

It is composed of structure, fine material opening, rotating cleaning brush (optional), tooth handle and other components.

Equipment features

- No bars, many teeth are connected to form a rotating surface, Clean up the residue thoroughly;
- Mechanical overcut protection and overcurrent overload protection are provided, on the safe side;
- There is an auxiliary mechanism for removing dirt from the gear handle;
- Smooth operation, low energy consumption and low noise;
- Simple structure, easy to install and maintain;
- To prevent accidental overload, overload current protection is provided, And the drive sprocket is designed with safety pin protection to realize it Mechanical and electrical double protection, so that the system operation is safe reliable.

Technical parameters

model	canal width (mm)	equipment width (mm)	Excess water volume (m3/h)	Current Speed (m/s)	Toothed cake clearance	Dragging mode
HZ-500	600	500	1180~2100	0.5~1.0	2~10	drag
HZ-600	700	600	1450~2280	0.5~1.0	2~10	
HZ-700	800	700	1720~2550	0.5~1.0	2~10	
HZ-800	900	800	2000~2900	0.5~1.0	2~10	
HZ-900	1000	900	2260~3100	0.5~1.0	2~10	
HZ-1000	1100	1000	2530~3370	0.5~1.0	2~10	
HZ-1100	1200	1100	2800~3640	0.5~1.0	2~10	two drag
HZ-1200	1300	1200	3070~3910	0.5~1.0	2~10	
HZ-1400	1500	1400	3610~4450	0.5~1.0	2~10	
HZ-1600	1800	1600	4150~5000	0.5~1.0	2~10	
HZ-1800	1900	1800	4690~5540	0.5~1.0	2~10	
HZ-2000	2100	2000	5230~6080	0.5~1.0	2~10	
HZ-2200	2300	2200	5770~6620	0.5~1.0	2~10	
HZ-2400	2500	2400	6310~7160	0.5~1.0	2~10	

Model	Drive power (kw) Canal depth H (m) 2.5	5.0	7.5	10	Chain speed (m/min)	Install angle (a)	Slag removal height (m)
HZ-500	1.5	1.5	1.5	1.5	2~4	60~75	0.75~0.9
HZ-600	1.5	1.5	1.5	22	2~4	60~75	0.75~0.9
HZ-700	1.5	1.5	2.2	2.2	2~4	60~75	0.75~0.9
HZ-800	1.5	2.2	2.2	22	2~4	60~75	0.75~0.9
HZ-900	2.2	2.2	2.2	2.2	2~4	60~75	0.75~0.9
HZ-1000	2.2	2.2	2.2	2.2	2~4	60~75	0.75~0.9
HZ-1100	3.0	3.0	3.0	3.0	2~4	60~75	0.75~0.9
HZ-1200	3.0	3.0	3.0	3.0	2~4	60~75	0.75~0.9
HZ-1400	3.0	3.0	3.0	3.0	2~4	60~75	0.75~0.9
HZ-1600	3.0	3.0	4.0	4.0	2~4	60~75	0.75~0.9
HZ-1800	4.0	4.0	4.0	4.0	2~4	60~75	0.75~0.9
HZ-2000	4.0	4.0	4.0	5.5	2~4	60~75	0.75~0.9
HZ-2200	5.5	5.5	5.5	5.5	2~4	60~75	0.75~0.9
HZ-2400	5.5	5.5	5.5	5.5	2~4	60~75	0.75~0.9

LB type chain plate reciprocating grating cleaner

Construction and principle

The LB-type chain plate reciprocating screen cleaner is a continuous cleaning device produced by our company. It intercepts debris from the liquid with its bars, lowering the toothed plate from behind the bars to the bottom, then rotating it back to the front of the bars. The debris is lifted upward from below to the discharge port, achieving solid-liquid separation. The width can reach up to 4 meters. The toothed plate is driven by a two-speed chain for cyclic operation. The spacing between the toothed plates is 1.2~1.5m, effectively intercepting larger debris.

applied range

It is widely used in urban sewage treatment, rainwater and sewage pumping stations; water supply lifting pump stations; the inlet of sewage treatment plants to intercept and remove floating debris, which is an ideal sewage removal machine.

Equipment features

- The drive device adopts cycloidal pinion reducer, which has low noise, compact structure and stable and safe operation.
- The frame has a unique frame structure, strong rigidity, easy to install and maintain, carbon steel and stainless steel are divided into carbon steel frame for anti-corrosion treatment
- The tooth plate is processed by CNC machine tool, with high box size and beautiful appearance. The grid spacing can be determined according to user requirements.
- The transmission part is made of stainless steel, which can effectively prevent the equipment from damage.
- In order to prevent accidental overload, overload current protection is provided, and safety pin protection is designed on the drive sprocket to achieve mechanical and electrical double protection, so that the system can operate safely.

Technical parameters

	LB500	LB600	LB700	LB800	LB1000	LB1200	LB1400	LB1600	LB1800	LB2000
Fence channel width (mm)	500	600	700	800	1000	1200	1400	1600	1800	2000
Equipment width under the canal Degree 85 (mm)	400	500	600	700	900	1100	1300	1500	1700	1900
Total width of equipment B2(mm)	780	880	980	1080	1280	1480	1680	1880	2080	2280
	Customize									
The height of the equipment on the canal(mm)	H+1350									
	800~1200 Customize									
Installation angle	65°~75°									
	10、15、20、30、40、50、60、80、100									
Motor power	7.5~1.1			1.1~2.2					2.2~3	

ZG type drum screen cleaner

Construction and principle

ZG-I type

The device is installed at a 35-degree angle to the water channel. Wastewater flows into the drum from its end, and water exits through the grates on the side of the drum. Suspended solids and floating debris in the water remain in the drum. The drum rotates at a certain speed, with nylon brushes and rinse nozzles above it to remove the grit and squeeze out the water through a screw conveyor. The dehydrated material is then transported to the top discharge hopper and conveyed away by a conveyor.

ZG-II type

The equipment is installed at a 35-degree angle to the water level in the channel. Wastewater flows through the open end of the screen into the channel, where the bars intercept solid waste. When a certain water level difference is reached, a rotating paddle positioned on the central shaft rotates inside the screen. The rotation inserts teeth into the bars to clean them and lifts them upward. Upon reaching the highest position, all the screen debris flows into the central debris screw trough, where it is squeezed and dehydrated by a screw conveyor press, then transported to the top discharge hopper for removal.

Equipment features

- Thorough slag removal and high separation efficiency
- Large filtration area and small hydraulic loss
- No embroidery steel structure, maintenance workload is small
- It integrates multiple functions and has a compact structure

Application field The equipment is widely used in urban sewage, industrial wastewater, food processing industry, paper making industry and other sewage treatment projects. The equipment will remove floating matter and sediment from the water source intake, and squeeze out the dregs and discharge them after dehydrating.

Technical parameters

Model	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	3000
Drum diameter D(mm)	600	800	1000	1200	1400	600	1800	2000	2200	2400	2600	3000
Conveyor pipes	219	273	273	273	360	360	360	500	500	500	500	710
Grids Length(mm)	650	830	985	1160	370	500	1650	2000	2200	2200	2400	3000
Maximum water level H4	400	500	670	800	930	1100	1200	1300	1500	1680	1800	2100
Installation angle	35°											
E H1(mm)	41-600-2500											
Slag discharge height	H2=800-2000											
Equipment installation Height H (mm)	H=H1+H2+H3											

XWL type rotary microfilter

Construction and principle

Using a stainless steel filter with a pore size of 50 to 500 microns, microfiltration is a mechanical filtration method that maximizes the separation of tiny suspended particles (such as pulp fibers) in liquids, achieving the goal of solid-liquid phase separation. The difference between microfiltration and other methods lies in the extremely small pores of the filter medium, which rely on the centrifugal force generated by the rotating screen to maintain high flow rates under low hydraulic resistance, effectively retaining suspended solids. This equipment is specifically developed to address issues such as easy clogging, easy damage, high maintenance workload, and secondary investment associated with existing microfiltration machines. It is one of the best practical technologies for treating paper mill wastewater. This device is primarily designed for fiber impurity wastewater and is widely used in various scenarios requiring solid-liquid separation, such as papermaking, textiles, dyeing, and leather processing, achieving closed-loop reuse.

Equipment features

- Low head loss of equipment, energy saving
- Compact structure and small footprint
- Automatic backflushing device, stable operation, easy management
- Microfiltration machine for industrial aquaculture
- The application of 316L stainless steel and corrosion resistant materials has increased

Strong resistance to seawater corrosion

Technical parameters

Model parameter	xWL-1	xWL-2	xWL-3	xWL-4	xWL-5	xWL-6	XWL-7
Filter area (m²)	5	7	9	11	14	18	20
Filter mesh (mesh)	60~250	60~250	60~250	60~250	60~250	60~250	60~250
White filtering ability	50~100	80~150	100~200	120~240	150~300	200~400	250~500
Filter cartridge speed	4-6	4~6	4~6	4~6	4~6	4~6	4~6
Rinse water pressure	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Motor power (KW)	1.1	1.5	1.5	2.2	3	4	5.5
Diameter of filter cartridge (mm)	1000	1250	1250	1500	1500	1500	1800
Effective length of filter	1500	2000	2500	3000	3500	4000	4500
SS removal rate (9%)	~70-85						

Inner diameter flow grating

Construction and principle

Wastewater enters from the middle side of the vertical perforated plate fine screen cleaner and is discharged outward through the open grates on both sides. The debris trapped inside is lifted to the upper discharge area as the open grates rotate. Here, the debris is flushed away by the flushing system into the internal collection trough, then conveyed to the next equipment via a conveying device. Meanwhile, the mesh plates are also cleaned and enter the next working cycle. The inner flow mesh plate screen mainly consists of the main frame, rotating mesh plates and chains, drive unit, collection trough, backwashing system, and control system.

application area

The internal flow screen is a new type of fine screen cleaning equipment that continuously intercepts and removes solid debris from fluids, achieving excellent cleaning results. It can handle flat solids, weeds, melon shells, and especially hair and fiber contaminants that are difficult for traditional fine screens to intercept, significantly reducing the load on subsequent processing steps.

Equipment features

- The water surface area of the net plate is large and the garbage retention rate is high.
- Vertical installation, effective space saving.
- Smooth operation and easy lifting of the mesh plate without overload.
- Eliminate fiber and hair entanglement problems.
- Use the transfer brush and flushing mechanism to form the unloading system
- Garbage is removed more cleanly.

Technical parameters

Equipment model	-1000	-1200	-1400	-1600
Mesh board width (mm)	1000	1200	1400	1600
Channel width B (mm)	≥1200			
Channel depth H (mm)	1.0~5.0			
Mesh board aperture (mm)	Φ1、Φ2、Φ3 Φ5Φ6			
separation efficiency	81%~97%			
Flow velocity across the network (m/s)	≤0.6			
Allowable water level difference (mm)	300			
Motor power (kw)	0.55~2.2			
Flushing water pressure (MPa)	≥0.5			

DS type belt

conveyor

Construction and principle

The reducer drives the belt to move on the support rollers. The material on the belt, due to friction, moves along with the belt all the way to the other end of the belt, completing the conveying process. Conveyors come in two main types: horizontal and inclined installations. A conveyor mainly consists of a frame, reducer, belt, support rollers, centering rollers, guide rollers, etc.

Equipment use

The belt conveyor is mainly used to convey plastic sludge or powder particles, and is mainly used for environmental protection to convey bar slag, dewatered mud cake, sand ordering instruction

- When placing an order, please specify the belt width, conveying length and height Degree, except when used in conjunction with other equipment of the Company.
- If the user needs to determine the delivery speed, please indicate it.
- If other non-standard width is required, please indicate the width.

Technical parameters

parameter \ bandwidth		500	650	800
Drum diameter (mm)		320, 400	320, 400	500, 630
Line speed (m/s)		0.8~1.5		
Power (KW)		Determine based on broadband and transmission length		
Horizontal conveying	L	≤ 50m, can be made according to user requirements		
	H	According to user requirements or other supporting equipment		
	C	720	870	1020
	B	500	650	800
Inclined conveying	L	≤20m, Can be made according to user requirements		
	H1	Standard height 600-800, can be customized according to user requirements		
	H2	According to user requirements or other supporting equipment		
	α	≤25		

WLS type shaftless screw conveyor

Construction and principle

The WLS type shaftless screw conveyor is a fully enclosed structure, mainly consisting of the drive unit, shaftless spiral blades, U-shaped grooves, wear-resistant liners, and frame. The pitch and diameter of the spiral blades are determined by the material being conveyed. Without a central shaft, it allows for a larger conveying space and avoids faults caused by filamentous materials entangling around the central shaft. Around the blades, quick-install wear-resistant liners are used to reduce wear. Material enters through the feed opening, is pushed forward by the spiral blades, and exits through the discharge opening.

Equipment features

- Large channel transportation, no blockage, reliable operation
- Length, Angle and inlet and outlet can be customized according to requirements
- Closed operation, low noise, good environment
- The lining of the trough is wear-resistant, easy to maintain and has a long life
- Easy to install, it can be fixed by using expansion bolts
- No tail support, easy to maintain

application area

WLS type shaftless screw conveyor is mainly used for conveying sludge, bar screen residue and semi-fluid substances, which can be used in combination with mechanical bar screen decontaminator.

Technical parameters

Model	Blade diameter	Pitch (mm)	Conveying capacity (m³/h)	Speed (r/min)	Power (KW)
WLS260	260	240	6	16	1.1-2.2
WLS400	300	280	8	16	1.5-3
WLS400	400	380	15	12	2.2-3

Powder silo conveying

Construction and principle

Composition of powder dosing system: powder silo, silo top dust collector, ladder guardrail, etc

Break arch device, discharge valve, star discharger, screw conveyor, electrical control cabinet and so on

accomplish.

1. Feed procedure: Generally, after the powder tank truck arrives, the rubber hose on the tank truck is put on

Connect the feed pipe on the material bin, open the control cabinet, and click the vibrator on the control panel

Switch, at this time the dust removal on the top of the warehouse will be indirectly started.

2. Discharge procedure: open the control cabinet and open the screw conveyor, unloader and discharge one by one

Valve, arch breaking system.

3. Automatic control system: when the material level in the bin drops to the next level meter, the system stops

Work, the control cabinet began to beep alarm, reminding the staff to prepare for feeding work.

4. Arch-breaking device: The arch-breaking device is generally composed of vibrating hopper, mechanical arch-breaking machine, etc.

The broken arch device is intermittent operation mode, and the running and stopping time can be controlled on the control panel of the electrical control cabinet

Upper regulation.

5. The star discharger adopts variable frequency motor and can be set on the control panel of the electrical control cabinet

Frequency, the speed of the discharger determines the amount of material discharged, customers can adjust the amount of material discharged according to their needs.

Equipment features

- Automatic dust collection when feeding;
- Mechanical vibration loosening of the material;
- Warehouse level display;
- Quantitative discharge;
- Break arch and dehumidification design;
- System PLC program control.

Technical parameters

Model	Volume (m^3)	Cylinder diameter (mm)	Height of the straight section of the cylinder(mm)
LC-5	5	1800	2250
LC-10	10	2000	3000
LC-15	15	2300	3500
LC-20	20	2500	4000
LC-30	30	2880	4000
LC-35	35	3000	4500
LC-50	50	3200	6000
LC-80	80	3400	8800
LC-100	100	3600	9500

LSY type screw conveyor press

Construction and principle

The LSY type screw conveyor press mainly consists of a drive unit, screw shaft, conveying trough, discharge pipe, wear-resistant lining, and drainage trough. Waste material enters the press pipe through the feed opening, is compressed, and then discharged into the discharge pipe. The wastewater is separated and directed to the drainage trough for separation. The wear-resistant material is made of nylon, which is both wear-resistant and corrosion-resistant. It is designed for quick installation, making it easy to install.

application area

The LSY type screw conveyor press is mainly used for the conveying and dewatering treatment of bar screen waste. It can be used in combination with bar screen waste machine and belt conveyor to squeeze out the water from the waste collected by the bar screen waste machine, so as to reduce the volume of the waste.

Technical parameters

Sedimentation tank				Aerator	Air impact and lift load		Supply air	
Model	flow L/s	volume m³	Sand bucket volume m³	m³/min	Airflow m³/min	Pressure Kpa	Air volume m³/min	wind pressure
XLS(Q)30	34	2.0	1.0	0.36	2.0	30	2.0	35
XLS(Q)60	57	2.3	1.0	0.72	2.0	30	2.0	35
XLS(Q)100	116	4.1	1.0	1.20	2.0	30	2.0	35
XLS(Q)200	230	7.4	2.5	2.40	2.5	30	2.0	35
XLS(Q)500	460	14.4	2.5	3.00	2.5	50	2.0	50
XLS(Q)700	694	22.0	2.6	4.00	3.0	50	5.0	50
XLS(Q)900	926	33.0	2.6	5.00	3.0	50	5.0	50
XLS(Q)1100	1157	38.0	2.6	6.00	3.0	50	5.0	50
XLS(Q)1400	1388	41.6	2.7	7.00	3.2	60	6.0	60
XLS(Q)1600	1620	50.0	2.7	8.00	3.2	60	8.0	60
XLS(Q)2330	2315	56.5	3.0	10.00	3.2	60	10.0	60

GAB (GAQ) type semi-bridge (full bridge) peripheral transmission sludge scraper

Construction and principle

Raw water flows out from the bottom of the tank through the upper part of the central support pier, then radiates to the surrounding collection troughs via a flow stabilizer. As the radial flow velocity decreases, suspended solids in the raw water are separated and settle at the bottom of the tank. The working bridge is centered on the central support position, with its end wheels driven by a mechanism that rotates around the perimeter of the tank. This rotation drives the connecting frame, scraper frame, and multiple inclined sludge scrapers together. When one scraper moves away from the sludge machine, another scraper near the center takes over, allowing the sludge to flow step by step into the central sludge hopper. The sludge is then discharged from the tank by water pressure and pumps. The floating scum on the upper part is simultaneously scraped to the periphery of the tank by a scum baffle and then removed by a scraper rake into the discharge hopper. At the same time, the cleaning device near the working bridge also rotates with it, cleaning the effluent weir.

It is mainly composed of working bridge, end beam, central bearing and collecting device, steady current cylinder, cleaning device, connecting bracket, scraper frame of scraper machine, pull beam, floating scum baffle, scraper rake, slag discharge hopper and other components.

Equipment features

- Simple structure, energy saving, easy to install, maintain and manage;
- Smooth operation, safe and reliable work;
- The sludge scraping effect is good, and the discharged sludge has low water content;
- The motor reducer is equipped with over-twist protection and overcurrent overload protection, which is safe and reliable.

ordering instruction

- Indicate the technical conditions such as pool diameter, pool depth, water depth, peripheral drive line speed and bottom slope of the pool;
- The required floating scum baffle can specify the material, size and other technical requirements;
- Indicate the material of the underwater parts (carbon steel or stainless steel)
- If there are special requirements for anti-corrosion, please indicate them.

Technical parameters

Model	Pool diameter (m)	Pool depth	Peripheral linear	Drive motor power
GAB(GAQ)20	20	3.5	≤2.0	0.75/0.5
GAB(GAQ)25	25	3.5	≤2.0	0.75/0.5
GAB(GAQ)30	30	4.0	≤2.0	0.75/0.5
GAB(GAQ)35	35	4.0	≤2.0	0.75/0.5
GAB(GAQ)40	40	4.5	≤2.0	0.75/0.5
GAB(GAQ)45	45	4.5	≤2.0	0.75/0.5
GAB(GAQ)50	50	5.0	≤2.0	0.75/0.5

XZBH type full bridge peripheral rainbow scraping mud machine

Construction and principle

The original position of the sludge suction machine is at the inner water inlet. The sludge suction machine starts running from its original position, and the submersible pump begins to operate, drawing water into the tank. When the water level in the tank submerges the outlet of the sludge discharge pipe, the air inside the pipe is trapped. At this point, a pressure difference is created between the two ends of the water jet due to different flow velocities, which forces the air out of the sludge discharge pipe. As the air is continuously expelled from the sludge discharge pipe, the water level rises under atmospheric pressure. When the vacuum in the sludge discharge pipe reaches a certain level, water automatically flows out, forming a siphon. At this point, components such as the weir plate are closed.

It is mainly composed of working bridge, siphon device, sludge suction device, central rotating support and collector device, cleaning device, control cabinet, ladder, slag discharge hopper, floating slag baffle, end beam and drive device, sludge scraping plate, water outlet weir plate and other components.

Equipment features

- The equipment structure is simple, which simplifies the sedimentation tank structure and saves engineering investment;
- Using siphon sludge discharge, stable operation, energy saving;
- According to the sludge sedimentation, the working stroke and the number of sludge discharge can be adjusted to improve the sedimentation effect;
- High degree of automation, easy operation, maintenance and management, less likely to fail.

application area

This equipment is mainly used for sludge suction and discharge in horizontal settling tanks, secondary settling tanks and other flat circular tanks in water supply equipment. It is suitable for mechanical sludge discharge with floating matter content less than 5000mg/L and solid particle content less than 25mg/L. The bottom of the tank is flat without slope.

The device relies on the cooperation of submersible pump and water jet to form siphon, which can adjust the sludge discharge stroke and sludge discharge according to the amount of sludge discharged

In fact, it can be discharged in one direction or in both directions.

Technical parameters

Model	Diameter of sedimentation tank (m)	Walking speed (m/min)	Motor power (kw)	
			Pump motor	Walking motor
X7BH20	20	1.2~2	2.2~4	0.55×2
XZBH25	25	1.2~2	2.2~4	055×2
XZBH30	30	1.2~2	2.2~4	0.55×2
XZBH35	35	1.2~2	2.2~4	0.55×2
XZBH40	40	1.2~2	2.2~4	0.55×2

XZXD type central transmission single pipe sludge suction machine

Construction and principle

When the sludge mixed liquor enters the golden water tank, it evenly enters the sedimentation area through the water distribution holes at the bottom of the tank. Under the effect of the surrounding water-blocking skirt plates, the water flows from the bottom to the center of the tank and returns to the surrounding water slots from the top. The peripheral water distribution troughs are designed with variable cross-sectional water distribution holes to ensure uniformity in peripheral water distribution. Meanwhile, under the influence of gravity, the sludge begins to settle at the bottom of the tank, forming a concentrated sludge layer. The clarified liquid then flows downward to the lower part of the tank and returns to the surrounding outlet slots, being discharged outside the tank through the outlet pipes. The active sludge on the surface of the tank bottom is removed from the tank through the sludge suction pipe due to the difference in liquid levels. The floating scum on the surface of the tank is scraped into the scum hopper by the scraper device and discharged from the tank.

The sludge suction machine is installed on the central column of the sedimentation tank. It is driven by a mechanism that operates the scraper plate. The truss and the sludge suction pipe rotate slowly along the bottom of the tank. Under the action of water pressure, the sludge enters the specially designed discharge holes in the sludge suction pipe uniformly. This ensures that all the sludge at the bottom of the tank is discharged evenly through the discharge pipe track and the discharge valve. The amount of sludge discharged is controlled by the opening degree of the sleeve valve inside the discharge well.

It is mainly composed of working bridge, scraping mud pipe, floating body hopper (with washing equipment), dregs removal device, rotating cage, central drive device, central column, truss, water skirt plate, mud collection cylinder, weir plate, counterweight box, electrical control box and other components.

Equipment features

- The surrounding water inlet trough adopts the design of variable section, variable flow and variable water head to ensure the uniformity of water inlet around the water inlet trough;
- The sludge suction pipe is conical, with variable-diameter suction holes and variable hole spacing design. Compared to other sludge discharge equipment, the suction pipe collects sludge uniformly across the entire bottom of the tank in proportion, allowing for a higher volume of sludge extraction. This ensures that the entire tank surface is fully utilized, guaranteeing accurate and rapid removal of settled sludge in one go, achieving high sludge collection efficiency and saving on sludge return power;

• Central transmission, using a new structure, one side of the sludge suction pipe, one side set of sludge scraper, light structure, uniform sludge discharge, flexible operation, small power consumption;

• It saves the investment of the foundation construction of the secondary sedimentation tank and the operation cost of the sludge suction machine and the return sludge pump, and simplifies the sludge discharge operation of the sludge suction.

Technical parameters

Model	Pool diameter (m)	Peripheral line speed (m/min)	Motor power (KW)	Pool depth H (m)	Water depth H (m)
XZXD10	10	2	0.55	4	3.5
XZXD12	12	2	0.55	4	3.5
XZXD14	14	2	0.55	4.5	4
XZXD16	16	2.4	0.75	4.5	4
XZXD18	18	2.4	0.75	5	4.5
XZXD20	20	2.6	0.75	5	4.5
XZXD22	22	2.6	0.75	5	4.5
XZXD24	24	3	1.1	5.5	5
XZXD26	26	3	1.1	5.5	5
XZXD28	28	3	1.1	5.5	5
XZXD30	30	3	1.1	5.5	5

XHJH type truss siphonic sludge machine

Construction and principle

The original position of the sludge suction machine is at the water inlet. The sludge suction machine starts running from its original position, and the submersible pump begins to operate, drawing water into the tank. When the water level in the tank submerges the outlet of the sludge discharge pipe, the air inside the pipe is trapped. At this point, a pressure difference is created between the two ends of the water jet due to different flow velocities, which forces the air out of the sludge discharge pipe. As the air in the sludge discharge pipe continues to be expelled, the water level rises under atmospheric pressure. When the vacuum in the sludge discharge pipe reaches a certain level, water automatically flows out, forming a siphon. At this moment, the submersible pump is turned off, and the siphon begins to function normally.

It is mainly composed of working bridge, end beam drive device, sludge suction device, sludge scraping device, water jet, submersible pump, electromagnetic valve, vacuum gauge, rail and rail connection parts, electrical control box, sliding contact line.

Equipment features

- The equipment structure is simple, which simplifies the sedimentation tank structure and saves engineering investment;
- Using siphon sludge discharge, stable operation and energy saving;
- Walking and scraping mud at the same time, can work back and forth, less interference to sludge, good sludge discharge effect;
- According to the sludge sedimentation, the working stroke and the number of sludge discharge can be adjusted to improve the sedimentation effect;
- High degree of automation, easy operation and maintenance management, less likely to fail.

application area

The equipment is mainly used for sludge suction and discharge in horizontal settling tanks, secondary settling tanks and other flat-bottomed rectangular tanks in water supply equipment. It is suitable for floating matter content less than 5000mg/L, solid particle weight not more than 25mg/L, and the bottom of the tank is flat without slope. The machine relies on the cooperation of submersible pump and water jet to form siphon, siphon while walking, the siphon travel can be adjusted according to the amount of sludge discharge, the siphon interval time can be single suction or two-way suction.

Technical parameters

Model	Sedimentation tank width(m)	Walking speed (m/min)	Motor power (kw)	
			Pump motor	Walking pump motor
XHJH-8	8	1.2~2	2.2~4	0.55×2
XHJH-10	10	1.2~2	2.2~4	0.55×2
XHJH-12	12	1.2~2	2.2~4	0.55×2
XHJH-14	14	1.2~2	2.2~4	0.55×2
XHJH-16	16	1.2~2	2.2~4	0.55×2
XHJH-18	18	1.2~2	2.2~4	0.55×2
XHJH-20	20	1.2~2	2.2~4	0.55×2
XHJH-24	24	1.2~2	2.2~4	0.55×2

ZX type combined high efficiency inclined pipe sedimentation tank

Construction and principle

The inclined flow sedimentation tank is formed according to the shallow pool theory by adding inclined plates or inclined tubes in the sedimentation area of the sedimentation tank. It consists of inclined plate (tube) sedimentation area, water distribution area for inlet water, clear water discharge area, buffer area and sludge area.

The working method of this equipment belongs to the pressurized dissolved air flotation process. Its principle is as follows: under certain conditions, a large amount of air is dissolved in water to form dissolved air water, which serves as the working medium. By releasing sudden depressurization, a large number of micro-bubbles are rapidly generated and adhere to the "flocs" in the wastewater after coagulation reactions, causing the flocs to float. The floating sludge and oil are then removed by a dedicated scraping device, achieving the purpose of solid-liquid separation.

The inclined flow sedimentation tank boasts high sedimentation efficiency, short retention time, and minimal footprint, making it widely used in water treatment but less so in wastewater treatment. It has achieved considerable success in the concentration of tailings slurry from mineral processing and oil separation from oily wastewater at refineries. It is also applied in dyeing wastewater treatment and urban sewage treatment.

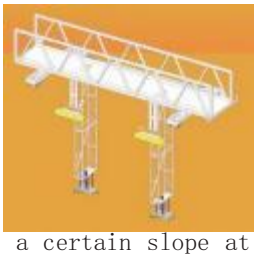
Equipment features

The ZX combination high-efficiency inclined tube sedimentation tank is developed based on shallow sedimentation tanks for dispersed particles and multi-layer multi-compartment sedimentation. It incorporates the advantages of other manufacturers and absorbs advanced technology from Japanese inclined tube sedimentation tanks. Designed as a combined inclined tube sedimentation tank, it excels in adapting to high-turbidity wastewater and highly variable raw water, featuring stable sludge discharge, fast sedimentation speed, no energy consumption, and convenient operation and management.

Technical parameters

Project	zX-5	zX-10	zX-20	ZX-30	zX-40	zX-50	zX-60
Processing water volume m^3/h	5	10	20	30	40	50	60
Inlet water quality mg/L	1000-1500	1000-1500	1000-1500	1000-1500	2000-2500	2000-2500	2000-2500
Inclined pipe velocity	3-3.5	3-3.5	3-5	5	5	5	5
Effective area m^2	45	80	150	201	264	357	405
working pressure	Normal pressure	Normal pressure	Normal pressure	Normal pressure	Normal pressure	Normal pressure	Normal pressure
working temperature	normal atmospheric temperature	normal atmospheric temperature	normal atmospheric temperature	normal atmospheric temperature	normal atmospheric temperature	normal atmospheric temperature	normal atmospheric temperature
volume m^3	7	12	23	31	40	55	62
Weight T	3.6	4.8	6.5	8.5	10	11.5	13

GH type gantry scraper



The structure and principle

Adopt reciprocating action to scrape the sludge bottom to one end of the mud collection pit for discharge. The sludge at the bottom of the horizontal flow sedimentation tank is scraped and collected, with water entering at one end and leaving at the other. There is a certain slope at the bottom of the tank (about8/1000). The track length is generally about 4~25m. When the pool width is large, it can be made into a multi-pool structure. The track length of 4~8m is generally front drive. When the upper water surface scraping oil or foam device is equipped.

It is mainly composed of ladder, working bridge, end beam and drive device, effluent weir plate, floating scum baffle, scum scraper plate, sludge scraper, lifting device, discharge scum hopper and other parts.

Equipment features

- The hinge scraper arm can automatically divide the scraping and collection, and there will be no jamming;
- PLC automatic operation (full stroke or half stroke operation) can be realized;
- It has the function of lifting the mud, which can realize the load reduction or unidirectional scraping;
- When the span is large, synchronous electromechanical is generally used, and there will be no climbing track phenomenon;
- Scraping plate professional rubber plate and roller, scraping mud completely reliable.

applied range

In the sewage treatment project, there will be relatively large solid particles, such as soil, sand and coal slag, deposited at the bottom of the horizontal flow aerator sedimentation tank. GH gantry scraper is suitable for the sedimentation work of horizontal flow aerator sedimentation tank. This is the preliminary pretreatment process in sewage treatment project, which can reduce the workload of subsequent work.

ordering instruction

1. Indicate the depth of the pool and the slope of the bottom;
2. Supporting steel bars and steel bar connectors, control cables and their effective and safe operation accessories shall be specified;
3. Indicate the material of water above and below (carbon steel or stainless steel);
4. If there are special requirements for anti-corrosion, please indicate them.

Technical parameters

Model	Pool width (m)	Pool depth (m)	Walking speed (m/min)	Drive motor power (KW)
GH10	10	3.5~5	≤2.0	0.75/0.55×2
GH12	12	3.5~5	≤2.0	0.75/0.55×2
GH15	15	3.5~5	≤2.0	0.75/0.55×2
GH20	20	3.5~5	≤2.0	0.75/0.55×2

Waste gas spray tower

Construction and principle

Acid mist exhaust gas is introduced into the purification tower via ducts, passing through the packing layer where it undergoes thorough gas-liquid contact with sodium hydroxide absorbent solution for absorption and neutralization reactions. After purification, the acid mist exhaust gas is further dehydrated and demisted by a mist eliminator before being discharged into the atmosphere by a fan. The absorbent solution is pressurized at the bottom of the tower by a pump and sprayed down from the top, eventually returning to the bottom for recirculation. The purified acid mist exhaust gas meets the local emission standards of Jiangsu Province and is below the national emission standards.

Composition of spray tower

The packing layer inside the spray tower serves as a mass transfer device for contact between gas and liquid phases. At the bottom of the packed tower, there is a support plate for the packing material, which is placed in a random manner on this plate. Above the packing, a pressure plate is installed to prevent it from being blown by the rising gas flow. The spray liquid from the top of the tower is sprayed onto the packing through a liquid distributor and flows down along the surface of the packing. Gas is introduced from the bottom of the tower, distributed by a gas distributor, and then flows countercurrently through the gaps in the packing layer with the liquid. On the surface of the packing, the gas and liquid phases come into close contact for mass transfer. When the liquid flows downward through the packing layer, wall flow can sometimes occur, causing uneven distribution of the gas and liquid phases within the packing layer, thereby reducing mass transfer efficiency. Therefore, the packing material inside the spray tower is divided into two sections, with a redistribution device set in between to redistribute the material before it is sprayed onto the lower section of the packing.

Equipment features

- High dust removal and desulfurization efficiency, when alkaline washing water is used, the desulfurization efficiency can reach 85%;
- Small footprint and easy installation;
- Low water and electricity consumption indicators;
- Corrosion resistant, no wear, long service life;
- The equipment is reliable and easy to maintain.

Technical parameters

Equipment model		-10	-20	-30	-40	-50	-75
Processing air		1000m³/h	2000m³/h	3000m³/h	4000m³/h	5000m³/h	7500m³/h
External dimensions	D	700	900	1100	1300	1500	1700
	D1	1000	1200	1400	1600	1800	2000
	H1	1200	1200	1200	1200	1200	1200
	H	5500	5500	6000	6000	6500	7000

Equipment model		-100	-150	-200	-250	-300	-400	500
Processing air volume		10000m³/h	15000m³/h	20000m³/h	25000m³/h	30000m³/h	40000m³/h	50000m³/h
External dimensions	D	1900	2300	2700	2900	3200	3500	4000
	D1	2200	2600	2700	2900	3200	3500	4000
	H1	1200	1200	1200	1200	1200	1200	1200
	H	7500	7500	8500	8500	9000	9000	9500

Activated carbon adsorption device

Construction and principle

Activated carbon adsorption equipment is the best purification device for treating organic exhaust gas and odor. Activated carbon adsorption is an effective measure to remove odors from water, natural and synthetic dissolved organic matter, and trace pollutants. Most larger organic molecules, aromatic compounds, and halogenated blocks can be firmly adsorbed onto the surface or pores of activated carbon, showing significant removal effects on humic substances, synthetic organics, and low-molecular-weight organics. As a deep purification process, activated carbon adsorption is commonly used for the final treatment of wastewater and can also be applied to the purification of industrial water and domestic water.

The activated carbon adsorption unit mainly consists of an activated carbon layer and a support layer. Activated carbon has well-developed pores, with a large specific surface area, giving it high adsorption capacity. It is precisely because of these characteristics that activated carbon is widely used in advanced water treatment processes, such as potable water supply and advanced (purified) treatment of wastewater. After a period of use, activated carbon adsorbs a large amount of adsorbent and gradually tends to saturation and loses its working capacity. In severe cases, it will penetrate the filter layer, so the regeneration or replacement of activated carbon should be carried out.

Equipment features

The activated carbon adsorption tower for organic waste gas is widely used in furniture and wood industry, chemical coatings, metal surface treatment and other places where organic waste gas and odor are produced by spraying, painting and drying. High-quality activated carbon is used as the adsorption medium, and organic waste gas is filtered and adsorbed through multiple layers of adsorption layers, so as to achieve the purpose of purifying waste gas.

Process characteristics

- It is divided into manual and automatic types, with a compact integrated structure, easy to install and operation maintenance;
- High filtration speed, large processing capacity, stable operation effect, less equipment space;
- Large interception capacity, high porosity, wear resistance, moderate specific gravity.

Technical parameters

Model	Air volume m3/h	Dimensions (mm)	Wind outlet size (mm)	Box weight (kg)	Activated carbon Weight (kg)	drag coefficient (Pa)
3000	3000	1000×1000×1000	500×500	160	150	<600
5000	5000	1700×1250×1500	500×500	290	270	<600
10000	10000	2300×1050×1500	500×500	620	540	<800
15000	15000	2600×1050×1500	600×600	730	800	<800
20000	20000	2700×1250×1500	600×600	870	1020	<800
25000	25000	3200×1250×1500	600×600	1060	1280	<800
30000	30000	2900×1250×1500	600×1200	1390	1430	<900
35000	35000	3150×1250×2000	700×1400	1730	1800	<900
40000	40000	3500×1250×2400	700×1400	2000	2140	<900

Cover the exhaust gas deodorization

Construction and principle

The cover for sewage pools is a new method of exhaust gas deodorization, with an innovative structure and diverse forms. Depending on different deodorization requirements, various design solutions can be developed. In terms of exhaust gas deodorization, the effect is significant. Compared to traditional methods that use covers, this method employs a reverse hanging membrane cover. By utilizing the principle of reverse hanging membranes, the steel structure is placed outside the membrane material. Through the purification and collection functions of exhaust gas treatment equipment, the exhaust gas is purified to meet emission standards.

The main principle of the wastewater pool cover work is: adding a membrane structure above the wastewater pool, which isolates the exhaust gas produced in the pool from the air. Ventilation outlets are added to the surface of the protective cover, and ventilation ducts are installed. The exhaust gas enters the exhaust purification tower through the ventilation ducts. To enhance exhaust gas collection, a fiberglass fan is installed in front of the purification tower, drawing the exhaust gas into it. Inside the tower, the exhaust gas undergoes two-stage spraying. If the exhaust gas is acidic, an alkaline solution is used for cyclic absorption; if it is alkaline, an acidic solution is used for cyclic spraying. The exhaust gas treatment efficiency reaches over 90%, and emissions meet national standards.

Equipment features

- The membrane material of the sewage pool cover has the characteristics of strong tensile strength and good sealing, which can seal the waste gas in a closed space to prevent the contact between the waste gas and the air, thus causing secondary pollution.
- The anti-corrosion performance of the membrane material is helpful to the collection of waste gas, which can improve the collection efficiency of waste gas and improve the performance advantages of the inverted membrane cover.
- Sewage pool covering is an environmentally friendly treatment method for waste gas, which can avoid the pollution of air by waste gas and meet the requirements of environmental protection production and discharge.
- Easy to repair, because this kind of goods is very resistant to corrosion and aging, there is no need to protect it regularly as a metal item, so the cost is greatly reduced.
- According to the specific situation of the site, the product size can be sensitive to the plan. The shape can be like an arc cover, a round cover for the water tank, a flat cover, etc.

Technical parameters

Compressive strength	180MPa	bearing	20 tons
Thickness of steel	6mm	Ignition temperature	600℃
Place of use	Sewage tank	Airspeed	3.0
Size	6 meters, 9 meters 9.8 meters, 5.7 meters	Steel usage per square meter	10-30KG
Processing concentrati	300mg/l	function	Sealed odor
Classification	PTFE membrane structure	Processing air volume	30000m3/h
Load level	Level 2	weight	1-20kg/m

TJDP type biological odor removal device

Construction and principle

Biological deodorization is a method that artificially utilizes the purification ability of microorganisms in nature to control these microbial communities within specific facilities to remove odors. The process essentially involves using the life activities of microorganisms to convert substances produced in the airflow into simple organic compounds (such as carbon dioxide, water, and inorganic salts), with fewer odor substances and cytoplasm, and mostly carbon-containing organic compounds ultimately

It is converted into CO2, and the combined ammonia decomposes into NH3 first, then oxidized to nitrite and finally to nitric acid. The combined sulfur is often oxidized to thiacarbon or sulfate.

Microbial deodorization is usually carried out at room temperature and pressure. During operation, it needs to consume the power cost of making the odor substances contact with microorganisms and a small amount of adjustment of the microbial nutrition environment. The biological treatment of odor gas generally does not produce secondary pollution and is an environmentally friendly technology.

Equipment features

The equipment of this group is suitable for cultivating and fixing the introduced microorganisms in the coating device. By controlling the environmental conditions that adapt to the growth of microorganisms, the deodorization and purification capacity of microorganisms can be fully and efficiently utilized. The process includes dust removal, washing, humidification, biological deodorization, etc., with characteristics such as low operating costs and convenient management.

application area

It is mainly used for urban sewage pump station, urban sewage treatment plant, small sewage treatment device, feces loading site and other gas deodorization.

Technical parameters

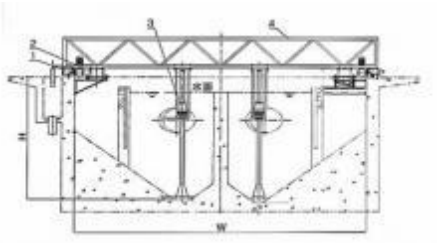
Equipment model	TJDP-800	TJDP-1200	TJDP-1600
Processing capacity (m3/h)	800	1200	1600
Equipment dimensions (mm)	2500×2000×3000	3000×2500×3000	4700×2000×3300
Basic dimensions of equipment (mm)	2700×2300	3200×2300	5000×2300
Interface size (mm)	320×200	320×200	500×200
Equipment resistance (Pa)	1200	1200	1200
Required to be equipped with	12	15	15
Normal power consumption (kw)	2.2	3	4
Water consumption (m3/d)	0.5	0.5	0.5
Net weight without load (kg)	3000	4000	5500
Normal operating weight (kg)	5600	8000	10000

Equipment model	TJDP-4000	TJDP-6000	TJDP-9600A
Processing capacity (m3/h)	4000	6000	9600
Equipment dimensions (mm)	4000×3000×3000	4000×3800×3000	4500×5500×3000
Interface size (mm)	500×320	500×320	500 × 320
Equipment resistance (Pa)	1200	1200	1200
Required to be equipped with electricity (kw)	20	24	33
Normal power consumption (kw)	6	9	17.5
Water consumption (m3/d)	1.0	1.5	2
Net weight without load (kg)	6500	8000	10000
Normal operating weight (kg)	10000	12000	15000

PXS type plain current bridge sand suction machine

Construction and principle

The bridge sand suction machine walks back and forth on the pool surface. The sand suction pump (submersible pump) on the machine sucks out the mixture of sand and water from the bottom of the pool, and through the conveying pipe, injects the mixture of sand and water into the sand-water separator for separation. At the same time, there is a scum scraper (according to the design requirements) on the machine to scrape the floating scum on the water surface into the scum habitat at the end of the pool and discharge it.



Equipment features

- Advanced technology, simple structure
- Use non-clogging submersible sludge pump to suck sand, safe and reliable
- Transmission synchronization, smooth operation
- Easy operation and maintenance

applied range

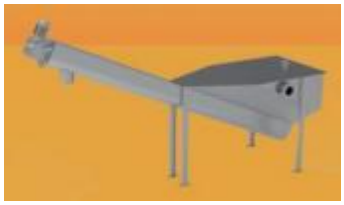
In wastewater treatment projects, in the horizontal flow aeration grit chamber, heavier solid particles such as sand and coal slag settle at the bottom of the tank. The PXS type horizontal flow sand suction machine is used for the removal of sediment from the horizontal flow aeration grit chamber. This is an early pretreatment step in wastewater treatment processes, aimed at reducing the load on subsequent equipment and primary settling tanks.

Technical parameters

Model	PXS-5	PXS-6	PXS-7	PXS-8	PXS-10	PXS-12	PXS-14	PXS-16
Pool width (m)	5	6	7	8	10	12	14	16
Pool depth (m)	5.0~6.0							
Track gauge (m)	PXS-5	PXS-6	PXS-7	PXS-8	PXS-10	PXS-12	PXS-14	PXS-16
Submersible sand suction pump	Head H=2~12m, flow rate Q=10~54m3/h, power P=1.5~7.5KW							
Number of pumps	2~4							
Slag removal device function	0.37							
Driving power for walking	2×0.37							
Walking speed (m/min)	1~2							

SL type sand water separator

Construction and principle



The sand-water mixture conveyed from the sedimentation tank enters the cylindrical cyclonic pre-separator, and the sewage enters along the tangential direction of the cylinder to form a vortex so that the sand particles settle down, and then enters the screw sand-water separator.

The slurry enters the storage tank from the top of the screw separator, where it temporarily settles. Larger sand particles and other materials settle at the bottom of the tank. Driven by the screw, the sludge is conveyed upward along the inclined U-shaped channel from the bottom and gradually dewatered. After leaving the liquid surface, it continues to move a certain distance before being discharged through the radial sand outlet into the sand hopper. The clear water, separated from the sand, is discharged through the overflow outlet at the top.

Equipment features

- High separation efficiency, up to 96~98%
- Use of shaftless screw conveyor, no water bearing, light weight, easy to maintain
- All made of stainless steel, the shape is smooth and beautiful
- Wear-resistant semi-circular plate is made of high molecular polyethylene material, which has good sliding property and wear resistance, small power loss and long service life
- Small footprint, less investment
- Electrical control can be realized according to user requirements, including manual, timing, PLC control and PLC functions
- Easy installation and operation

application area

The sand-water separator is used for the sand-water separation of the mixed water extracted after the cyclonic sedimentation of sand.

Technical parameters

model	SL-260	SL-320	SL-355	SL-420
Processing capacity (m3/h)	40	70	100	125
Motor power (kw)	0.37	0.37	0.55	0.75
Spiral groove width (mm)	260	320	355	420
H(mm)	2965	2965	3450	3580
H1(mm)	2600	2600	3100	2250
H2(mm)	1650	1650	2090	2250
H3(mm)	1420	1420	1820	1900
H4(mm)	1200	1200	1280	12820
L(mm)	4000	4000	6000	6500
Inlet D (mm)	DN150	DN150	DN200	DN200
Water outlet D1 (mm)	DN200	DN200	DN250	DN250
Connecting pipe diameter D2 (mm)	DN150	DN150	DN200	DN200
Maximum width of the body (mm)	1300	1500	1600	1880
B1(mm)	1290	1490	1580	1800
B2(mm)	376	400	445	506
Rotating fluid diameter (min)	530	530	580	580
Spiral diameter (mm)	250	280	320	380
Spiral pitch (mm)	170	200	250	310

XLS (Q) type cyclone aeration sedimentation system

Construction and principle

The swirl aeration sedimentation tank is formed by adding annular aeration pipes or swirl stirring devices to a swirl sedimentation tank without external power. This type of swirl sedimentation tank uses circular steel structures or concrete bodies and operates in a horizontal swirl mode. Water flows into the tank tangentially, creating a swirling vortex; simultaneously, the annular aeration pipe stirring system aerates in a tangential direction within the tank, generating a vortex that rotates in the same direction as the water flow. Under the combined effect of gravity and buoyancy, sand particles descend along a spiral path on the tank walls and move toward the center of the tank, eventually settling into the sand hopper. Lighter organic matter separates from the sand particles in the middle part of the sedimentation tank. Under the action of aeration and stirring, it rises and is carried away by the water flow, achieving the purpose of sand removal and pre-aeration for wastewater. The equipment is equipped with an air-lift sand removal system, where two air inlet pipes introduce compressed air to loosen the settled sand in the hopper. Due to the effect of compressed air, the pressure inside the hopper is lower than the water level pressure, allowing the concentrated sand-water mixture to be lifted along the axis through the sand-lifting pipe into the sand-water separator for further processing.

applied range

Mainly used to remove sand particles from wastewater, the aeration and stirring system is utilized. The direction of aeration and stirring aligns with the tangential flow rotation, creating a vortex in the pool. Under the effect of aeration and swirling, the sand and gravel in the wastewater separate from attached organic matter and settle at the bottom of the pool in the sand hopper. Using a water-sand separation device, water and sand are separated to achieve the goal of sand-water separation.

This equipment is mainly used for urban life, industrial sewage treatment plants, rainwater and sewage pumping stations and other sand removal treatment projects, and can be used in the case of gas lift to remove particulate inorganic impurities from water.

Technical parameters

Sedimentation tank				Aerator	Air impact and lift load		Supply air	
Model	flow L/s	volume m³	Sand bucket volume m³	m³/min	Qi Chong m³/min	Pressure Kpa	Air volume m³/min	wind pressure Kpa
XLS(Q)30	34	2.0	1.0	0.36	2.0	30	2.0	35
XLS(Q)60	57	2.3	1.0	0.72	2.0	30	2.0	35
xLS(Q)100	116	4.1	1.0	1.20	2.0	30	2.0	35
XLS(Q)200	230	7.4	2.5	2.40	2.5	30	2.0	35
XLS(Q)500	460	14.4	2.5	3.00	2.5	50	2.0	50
XLS(Q)700	694	22.0	2.6	4.00	3.0	50	5.0	50
XLS(Q)900	926	33.0	2.6	5.00	3.0	50	5.0	50
xLS(Q)1100	1157	38.0	2.6	6.00	3.0	50	5.0	50
xLS(Q)1400	1388	41.6	2.7	7.00	3.2	60	6.0	60
xLS(Q)1600	1620	50.0	2.7	8.00	3.2	60	8.0	60
xLS(Q)2330	2315	56.5	3.0	10.00	3.2	60	10.0	60

XLS (J) type cyclone sedimentation tank agitator and sand lifting system

Construction and principle

The vortex sand settling tank agitator and sand lifting system involve adding an agitator to a vortex sand settling tank without external power. This vortex sand settling tank has a circular structure and operates in a horizontal flow pattern. Water enters the tank tangentially, creating a rotating vortex. At the same time, the agitator system rotates in the same direction as the water flow within the tank. Under the action of the agitator blades, the water entering the tank forms a spiral circulation.

Under the combined effect of centrifugal force and gravity, sand descends along a spiral path on the pool walls and moves toward the center of the pool, eventually settling into the sand hopper. Organic matter with a lower specific gravity separates from the sand particles in the middle part of the sedimentation tank. Under the action of stirring, it rises and is discharged with the water flow, thus achieving the purpose of sand removal.

The device is mounted on the hollow shaft of the mixer, equipped with a gas-lift sand extraction system. Two air inlet pipes supply compressed air to loosen the settled sand in the hopper. Due to the effect of the compressed air, the pressure inside the hopper is lower than the water level pressure, allowing the concentrated sand-water mixture to be lifted along the central axis through the sand-lifting pipes into the sand-water separator for processing. It mainly consists of a tank body, mechanical stirring system, gas-lift device, and operating platform.

Equipment features

- The underwater part is made of stainless steel and the above water part is made of carbon steel and anti-corrosion treatment is carried out
- The sand suction head and the air intake sand lifting system are connected in an active way, which facilitates disassembly
- The position of the stirring turntable on the hollow shaft is adjustable
- The stirring disc speed can be adjusted within the range of 15 rpm by frequency conversion to achieve the best sand settling effect

application area

The vortex sand settling tank agitator and sand lifting system are used for stirring the sediment in wastewater after it has passed through a screen to remove floating objects. This process separates the sediment from the water and then uses air lifting to extract the sediment from the water. The equipment is primarily suitable for urban domestic and industrial wastewater treatment plants, as well as rainwater and sewage pumping stations that require sand settling and removal. It can also be applied to other scenarios where it is necessary to remove particulate inorganic impurities from water.

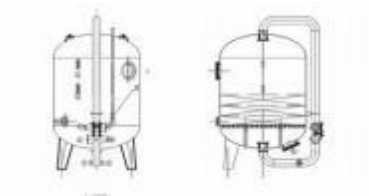
Technical parameters

Model	Flow rate of sand pipe (L/S)	Blower power (KW)	Blender power (KW)
XLS(Q)200	180	4	1.1
XLS(Q)300	280	5.5	1.1
XLS(Q)550	530	5.5	1.1
XLS(Q)900	880	5.5	1.1
XLS(Q)1300	1300	5.5	2.2
XLS(Q)1750	1750	7.5	2.2
XLJB2200	2200	7.5	2.2

ZSL type medium speed filter

Construction and principle

The upper part of the filter is filled with anthracite coal, and the lower part is filled with quartz sand. Dispersed and fine emulsified oil adheres to the surface of the anthracite coal, gradually forming oil droplets that float to the top of the filter. Suspended solids are intercepted by the anthracite coal and quartz sand filter layers. Raw water passes through the upper water distribution system, penetrates the filter layer, and is discharged from the bottom of the filter via a collection device. Backwashing is required when the filter layer has a high contaminant retention capacity or when the effluent quality deteriorates. Cleaning air and water sources enter from the lower part of the filter, using compressed air to disperse and compact the dense filter layer, causing the filter media to scrub against each other within the filter. The cleaning water then carries away the contaminants from the scrubbing process, achieving the filtration function.



Equipment features

The ZSL medium-speed filter boasts a rational structure, being lighter than similar equipment and easy to operate. The medium-speed filter is widely used in water treatment processes, primarily for turbidity removal in water supply, reverse osmosis, and as a pretreatment before ion exchange softening. It is also used in wastewater treatment at metallurgical, chemical, and light industry plants. It is an ideal and effective filtration device in circulating water systems. Our factory can design and manufacture various specifications of pressure filters according to customer requirements.

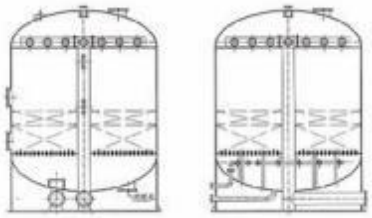
Technical parameters

Specifications		ZSL-0.8	ZSL-1.2	ZSL-1.6	ZSL-2.0	ZSL-2.6
Filtration area (m2)		0.50	1.13	2.0	3.14	5.31
Maximum speed (m/h)		20	20	20	20	20
Maximum filtration capacity (m³/h)		10	22	40	62	106
Maximum inlet pressure		~0.4Mpa				
Pre filtration water quality	Suspended solids	≤80mg/L				
	oil	≤10~20mg/L				
Filtered water quality	Suspended solids	≤10mg/L				
	oil	≤5~15mg/L				
Average pressure loss inside the filter		~0.05Mpa				
Parameter	Backwash water strength	10~15L/s, m2				
	Backwash water pressure	≥0.15Mpa				
	Backwash air intensity	15~20L/s.m2				
	Backwash air pressure	0.07Mpa				

GSL type high speed filter

Construction and principle

GSL high-speed filter can ensure the high quality of effluent water when there are more suspended solids in raw water. It has the advantages of high filtration speed, large treatment capacity and small footprint. This product is not only suitable for the filtration of raw water with more suspended solids, but also suitable for the circulating water supply system to improve water quality, improve water recycling rate and save water.



High-speed filter uses quartz sand and anthracite as fuel to filter the suspended matter that constitutes turbidity in water, so as to ensure that the turbidity in the effluent meets the requirements for water use.

Raw water (water to be filtered) enters the upper pipe of the filter, and is evenly distributed to both sides of the filter layer by the water distribution mechanism on the upper part of the filter. After passing through the filter of the filter and the filtration of several filter heads, it becomes treated clean water, which is then discharged from the tank to the outside for use by users.

Equipment features

- Control mode: manual or automatic control
- Filtration speed: 8m~10m/h
- Anti-wash intensity: 8~15L/m² · s
- Product specification: Φ800~3200mm
- Simplified materials: carbon steel anti-corrosion, steel liner rubber, 304,316

Technical parameters

Specifications		GSL-2	GSL-	GSL-3	GSL-	GSL-4
Filtration area (m²)		3.14	5.31	7.07	9.62	12.56
Maximum speed (m/h)		40	40	40	40	40
Maximum filtration capacity (m3/h)		125	210	280	385	500
Maximum inlet pressure		~0.4Mpa				
Pre filtration water quality	Suspended solids	≤80mg/L				
	oil	≤10~20mg/L				
Filtered water quality	Suspended solids	≤10mg/L				
	oil	≤5~15mg/L				
Average pressure loss inside the filter		~0.05Mpa				
Parameter	Backwash water strength	10~15L/s.m2				
	Backwash water pressure	20.15Mpa				
	Backwash air intensity	15~20L/s.m2				
	Backwash air pressure	0.07Mpa				

WF type steel gravity valveless filter

Construction and principle

Raw water is fed into the filter bed through the inlet pipe, where it is filtered from top to bottom by the filter layer. The clear water is then pumped into a storage tank via a connecting pipe for storage. Once the tank is full, the water is discharged into a clear water pool through the outlet pipe. The filter layer continuously intercepts suspended solids, gradually increasing the resistance within it, which in turn causes the water level in the siphon pipe to rise. When the water level reaches the mouth of the siphon auxiliary pipe, the water falls through this pipe and meets the exhaust pipe, which draws air out of the siphon descent pipe. When the vacuum reaches a certain level, siphonic action occurs. At this point, the water in the pipe flows upward through the filter layer, backwashing the filter media. When the water level in the rinse tank drops to the siphon break pipe, air enters the siphon pipe, disrupting the siphonic action. The backwashing process of the filter bed is complete, and the system moves on to the next cycle of operation.

applied range

Gravity valveless filter is widely used in surface water purification, iron and manganese removal from groundwater, bypass filtration of circulating water, removal of suspended impurities from production wastewater, subsequent filtration after biochemical treatment and secondary sedimentation tank treatment of organic sewage, as well as filtration of indoor swimming pool water. It is an ideal water treatment equipment.

Technical parameters

Specifications	Water production rate (t/h)	Piping size (mm)		
		Inlet pipe DN1	Water outlet	Backwash drainage pipe
WF20-III	20	100	100	300
WF40-III	40	150	150	300
WF60-II	60	200	150	400
WF80-IIII	80	200	200	400

Specifications	Equipment nozzle plane size (mm)				
	Φ1	Φ2	c	e	f
WF20-III	1400	900	1134	755	655
WF40-III	1800	1000	1350	950	780
WF60-III	2240	1000	1540	1125	890
WF80-III	2460	1000	1636	1225	945

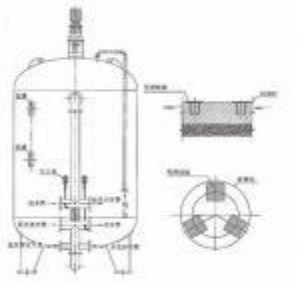
QL high efficiency fiber ball filter

Construction and principle

The QL type high efficiency fiber ball filter, like many other filters, removes suspended matter in water. The difference is that the filter material is made into various shapes of fiber threads, which effectively improves the filtration effect and filtration accuracy. It is generally used for medium precision filtration.

Equipment features

- Advanced filter material, high efficiency
- Small relative volume and low cost
- Fiber is resistant to corrosion and has a long life
- The fiber has a small specific gravity and a light running weight
- Long service life



Technical parameters

Model	QL800	QL1000	QL1200	QL1400	QL1600	QL2000	QL2400	QL2600
Specification x H (m)	0.8×2.86	10×2.92	12×3.02	1.4×3.02	1.6×3.05	2.0×3.25	2.4×3.30	2.6×3.35
Filter area S(m2)	0.5	0.79	1.13	1.54	2.01	3.14	4.52	5.31
Water production capacity m3/h	12~25	20~40	28~56	30~77	50~100	78~15	113~226	133~265

Performance project	Specific indicators	Performance project	Specific indicators
Single processing capability	15-210m3/h	Suspended solids removal rate	58-96%
Filtering speed	30m/h	Backwash intensity	10~15L/sm2
Design pressure	0.4Mpa	Backwashing duration	20-30min
resistance coefficient	Series connection ≤ 0.05Mpa Parallel s0.03Mpa	Cycle backwash water ratio	1-3%
Work cycle	8-48h	Cut off mud and sewage volume	6-20kg/m3
Coarse filter (single parallel)	Inlet SSs100mg/, outlet SSs10mg/, 10 micron particle size removal rate ≥ 95%		

ZP type full immersion disc filter

application scenarios

Generally used for upgrading and retrofitting urban wastewater treatment plants for reclaimed water reuse, it can also be applied to the treatment of reclaimed water from industrial wastewater, replacing sand filtration in traditional processes, which falls under advanced wastewater treatment. Compared with conventional advanced treatment processes, the disc filter has a smaller footprint and lower energy consumption, significantly reducing both initial investment and long-term operating costs.

Equipment features

- Large filtration area, large water flow and small footprint.

- We fix the disc in both radial and axial directions to ensure no displacement during operation. Each individual sector can be disassembled separately for easy maintenance and replacement. The transmission components are made of special steel with excellent wear resistance. A dedicated platform is provided during assembly to ensure balance before and after, preventing tilting of the central cylinder during operation and maintaining stress equilibrium.

- Low equipment investment, high cost performance. Equipment replacement is simple Its cheap.

- The assembly is equipped with a special pressure strip, and more importantly, the plate

The frame has a special design around the fan shape for assembling the filter cloth Circular grooves, this design can more firmly tension the filter The cloth is also largely avoided from being subjected to force Torn apart.

- The equipment investment consumes less energy per ton of water filtration and has lower operating costs low.

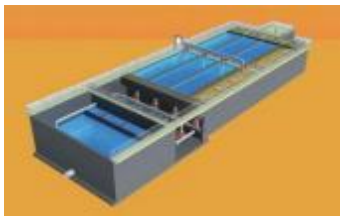
Technical parameters

Model	Diameter of filter disc	L	B	H	H1	H2	Electric valve	Recoil pump quantity
ZP-2000-2	2200	1600	2800	3500	2820	1260	2	1
ZP-2000-4	2200	2200	2800	3500	2820	1260	3	1
ZP-2000-6	2200	2800	2800	3500	2820	1260	4	1
ZP-2000-8	2200	3400	2800	3500	2820	1260	5	2
ZP-2000-10	2200	4000	2800	3500	2820	1260	7	2
ZP-2000-12	2200	4600	2800	3500	2820	1260	8	2
ZP-2000-14	2200	5200	2800	3500	2820	1260	9	3
ZP-2000-16	2200	5800	2800	3500	2820	1260	10	3
ZP-2000-18	2200	6400	2800	3500	2820	1260	11	3
ZP-2000-20	2200	7000	2800	3500	2820	1260	12	3

Model	Diameter of filter disc	L	B	H	H1	H2	Quantity of recoil pumps
ZP-2200-2	2200	2100	2800	2300	2360	3180	1
ZP-2200-4	2200	2580	2800	2300	2840	3660	1
ZP-2200-6	2200	3060	2800	2300	3320	4140	1
ZP-2200-8	2200	3540	2800	2300	3800	4620	1
ZP-2200-10	2200	4020	2800	2300	4280	5100	1
ZP-2200-12	2200	4500	2800	2300	4880	5580	1
ZP-2200-14	2200	4980	2800	2300	5360	6060	2
ZP-2200-16	2200	5460	2800	2300	5840	6540	2
ZP-2200-18	2200	5940	2800	2300	6320	7020	2
ZP-2200-20	2200	6420	2800	2300	6800	7500	2
Note: Please request detailed information during design.							

Denitrification filter

Construction and principle



In the denitrification process of the denitrification filter most of the denitrification reactions involve heterotrophic denitrifying bacteria using organic carbon sources (commonly methanol, acetic acid, and ethanol) as electron donors and nitrate or nitrite as electron acceptors in an oxidation-reduction process. Some autotrophic denitrifying bacteria use inorganic carbon (such as CO2, H2CO3) as a carbon source and hydrogen, iron, and sulfur compounds as electron donors.

Equipment features

- The occupied air space is small and the stay time is short.
- High denitration efficiency, the total nitrogen removal rate is up to 60%, separation and chemical dosing for phosphorus removal, complete phosphorus and denitration removal, can meet the strict requirements of total nitrogen and total discharge.
- The denitrification filter is stable and reliable by monitoring the process parameters to control the external carbon source.
- Common backwashing technology, more effective backwashing, less backwashing equipment, low energy consumption.
- It can complete sensitive conversion between sand filter (SS removal) and denitrification tank (total nitrogen removal after adding appropriate carbon source) according to the water quality condition, so that operation management is convenient and sensitive, and the treatment effect is more stable.

application area

- Upgrade and transformation of sewage treatment plants
- Municipal sewage deep treatment
- industrial waste disposal

Technical parameters

Content	technical parameter
Design water temperature	12~35℃
Number of filters	1 building with 4 compartments (equipment implemented in 3 compartments)
Average flow filtration rate	1.43m/h
Peak flow filtration rate	4.90m/h
Forced filtration rate (average flow rate, 2 grids)	5.14m/h
Filter layer height:	1.83m
Total head loss of filter tank	≤2.70m
Water backwashing intensity	15m³/m²h
Gas backwash flushing intensity	91~92m³/m²h
level control	Constant and variable liquid level switchable control mode
Backwash cycle	24-48h
Backwashing duration	15~20min
Carbon source addition	Adopting feedforward+feedback control form
Water consumption for backwashing	≤ 4% (detailed calculation process should be provided)

LS type continuous flow sand filter

Construction and principle

Sand bed filtration to remove solid suspended matter and other impurities is recognized as the most economical solution for water treatment or sewage purification, and sand has been favored by designers for a long time due to its unique properties.

Since its introduction in the 1980s, the continuous flow sand filtration system has gained widespread recognition globally and has been promoted for use. To date, over 40,000 filtration units have been installed worldwide. As recognition continues to grow, it maintains its advantages, with the number of users steadily increasing year by year.

The system adopts a rising flow bed filter and a single homogeneous filter material. Filtration and sand washing are carried out simultaneously, allowing for continuous automatic operation 24 hours a day without the need to shut down for backwashing. The ingenious sand lifting and washing structure replaces traditional high-power and backwashing systems, with extremely low energy consumption. The system requires no maintenance, is easy to manage, and can achieve unattended operation.

Continuous flow sand filtration system is a continuous operation sand type filtration device, the sand filtration is continuously washed by the built-in flushing system, because it does not need to stop for backwashing, making its operation and maintenance more convenient.

Equipment features

Continuous flow sand filter is used to solve the problems of drinking water treatment, industrial water supply, water recycling and wastewater discharge line treatment. The users are public utilities, pulp and paper industry, chemical industry, mining, pharmaceutical, food, power generation, incineration metal surface decoration and other industries that use and treat water.

Continuous contact filtration

The flocculation chemical is added to the water that needs to be filtered, and the front part of the filter bed acts as a reaction medium to create conditions for the rapid formation of flocs, so there is no need for a flocculation tank. In addition, this system has the ability to treat high concentration suspended solids, so there is no need for sedimentation.

Third level filtration

Before the discharge of wastewater, contact filtration method can be used if necessary to remove TP while removing ss, so as to further improve the effluent water quality.

Technical parameters

Model	Filter area	Diameter (mm)	Height (mm)	Processing water
SF-15	1.5	1440	5450	9~18
SF-30	3	1920	5800	18~36
SF-40	4	2260	5980	24~48
SF-50	5	2500	6120	30~60
SF-60	6	2800	6190	36~72
SF-70	7	3000	6755	42~84

High efficiency magnetic coagulation equipment

Construction and principle

Magnetic loading coagulation clarification technology is based on traditional coagulation sedimentation and chemical precipitation processes. By adding magnetic seeds as floc nuclei, it enables efficient co-precipitation of magnetic seeds and flocs to achieve water purification. The principle involves adding small amounts of coagulants and magnetic seeds to the water source, which then combine with pollutants to form magnetic flocs. A unique stirring system is developed through hydraulic simulation, significantly enhancing the magnetic mixing/flocculation effect. Since the density of magnetic powder is nearly five times that of water, the density of flocs containing magnetic powder increases rapidly, allowing them to settle quickly after being fed into the sedimentation tank. Magnetic seeds are efficiently recovered and recycled through a magnetic recovery system.

Equipment features

- Add magnetic powder to promote sedimentation
- Stable operation, good removal effect, no need to connect filtration device later
- The effluent can reach TP<0.3Mg/L, SS<10Mg/L
- High surface load, up to 18-30M3/M2*H, compact structure and small footprint application area
- Advanced sewage treatment and removal of SS and TP;
- Control and intercept pollution sources to maintain water quality in black and smelly rivers and water bodies;
- Domestic sewage and rainwater recycling treatment;
- Water purification and preservation of landscape water and lake water.

WF type vortex flotation

Construction and principle

The WF vortex flotation machine is specifically designed to remove oils, colloids, and solid suspensions from industrial and municipal wastewater. For different types of wastewater, it achieves an oil removal rate of over 95%, with most solid suspensions also being removed. When appropriate coagulants and mixtures are added, it can achieve a COD and BOD removal rate of over 60% in this pretreatment stage. Vortex flotation is an excellent wastewater treatment technology, featuring rational design, easy operation, and economic operation. The vortex aerator directly injects "microbubbles" into the wastewater without prior dissolved air. Then, through the diffuser impeller, the "microbubbles" are evenly distributed throughout the wastewater, ensuring no blockage occurs throughout the entire operation. The vortex flotation machine mainly consists of a tank, aerator, sludge scraping system, etc., without the need for pressure dissolved air, air compressors, or circulation pumps.

The working principle of the microbubble generator is to use the high-speed rotation of the diffuser impeller to create a vacuum zone in the water. Air on the surface of the liquid enters the water through the air supply pipe to fill and cut through, generating microbubbles that spiral upward to the surface. Oxygen from the air also enters the water as it rises. During this process, the wastewater mixes thoroughly with the microbubbles produced by the impeller. Due to the imbalance between the gas-water mixture and the liquid, a vertical upward buoyancy is generated, carrying solid suspended particles to the surface. As they rise, the microbubbles adhere to the suspended particles, allowing them to remain on the surface supported by these bubbles.

Equipment features

- It has a strong adaptability to the change of raw water quantity and quality;
- Save investment, this kind of flotation machine does not need pressure vessel, air compressor, circulation pump and jet pump and other equipment, thus greatly reducing the investment;
- Cost-effective: the structure of the flotation is simple, and the supporting civil engineering is very little. The equipment can be installed on the ground, underground or above;
- Low operating cost: the power required by this flotation is small, the operation and maintenance are simple, no need for more manpower;
- High efficiency: This flotation machine can automatically and continuously remove sludge from wastewater, with low water content in sludge, reducing the cost of sludge treatment;
- Reduce odor: the treatment process of wastewater by this flotation machine is an aerobic process, and the odor problem in sludge has been effectively solved.

Technical parameters

Wodel	WF75	WF100	WF150	WF175	WF200	WF320	WF-400	WF-500
Flow	75	100	150	175	200	320	400	500
Pool length	6.33	8.77	12.3	14.5	16.09	16.09	17.6	21.62
Pool width	1.80	2.41	2.41	2.41	2.41	3.05	3.50	4.40
Depth	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83
Total power	2.94	2.94	5.5	5.5	7.7	8.1	10.3	14.7

Total power	1.6	1.6	1.6	1.6	2.94	2.94	2.94

YF type stratified air flotation device

Construction and principle

The working method of this equipment belongs to the pressurized dissolved air flotation process. Its principle is as follows: under certain conditions, a large amount of air is dissolved in water to form dissolved air water, which serves as the working medium. By releasing sudden depressurization, a large number of microbubbles are rapidly generated and adhere to the "flocs" in the wastewater after coagulation reactions, causing the flocs to float. The floating sludge and oil are then removed by a dedicated scraping device, achieving the purpose of solid-liquid separation.

Equipment characteristics

Although the working principle and application range of the stratified flotation device are basically the same as other flotation devices, it has a major reform in structure. It has the following advantages:

1. Equipment Integration: Conventional dissolved air flotation systems typically consist of separate flotation tanks, dosing equipment, dissolved air tanks, dissolved air pumps, air compressors, and sewage pumps. This setup results in long installation times, inconvenient management, and a large footprint. YF dissolved air flotation integrates these separate components organically. Under normal conditions, wastewater with any pH value can be immediately put into use by simply connecting the inlet and outlet pipes.

2. Operation automation: Once YF flotation is debugged, it can be operated automatically and managed without human management.

application area

- The color removal rate of dyeing wastewater reaches about 90%;
- The COD removal rate of food, slaughter and leather waste water is high, and the suspended solids removal rate is about 90%;
- The oil in the refinery wastewater can be reduced to less than 10 mg/l. The wastewater can be clarified;
- Chemical wastewater and pigment paint have high COD removal rate, color removal rate is about 93%;
- The fiber recovery rate of paper mill white water can reach about 95%, the COD removal rate is high, and the clear water is completely reused;
- The turbidity of bath water in Daichi can be stabilized below 10 degrees, and the bacteria in the water have a large decrease;
- The turbidity of domestic drinking water and industry can be purified to less than 5 degrees, and at the same time, it has a good effect on reducing color and oxygen consumption.

Technical parameters

	YF-10	YF-15	VF-20	YF-30	YF-40	YF-60	YF-80	YF-100	YF-120
Processing capacity (m^3 h)	10	15	20	30	40	60	80	100	120
Diameter of dissolved gas	400	400	400	600	600	800	800	1000	1000
Scraping motor power	0.55								
Air compressor model	Z-0.025/6					Z-0.05/6			
Air compressor power	0.37					0.75			
Equipment weight approximately	5	8	10	13	17	20	25	30	35
Operating weight approximately	12	17	22	30	42	52	70	86	105

QF type shallow gas flotation equipment

Construction and principle

Flotation separation technology involves introducing air into water under certain pressure conditions to maximize the incorporation of gas into the water, aiming for saturation. The resulting pressurized dissolved air water is then depressurized, generating a large number of microbubbles. These bubbles come into full contact with suspended flocs in the water, causing them to adhere to the microbubbles and float to the surface along with them. The floating flocs are then scraped off, thus purifying the water.

The QF-type high-efficiency shallow gas flotation device developed by our company is an advanced rapid flotation system. Based on traditional flotation theory, this device successfully applies the "shallow layer theory" and the "zero-speed" principle. Through meticulous design, it integrates coagulation, flotation, dewatering, sedimentation, and sludge scraping into one unit, making it an efficient water purification equipment.

application area

In the process of water supply and drainage treatment, solid and liquid separation technology and its equipment are one of the key projects. For the removal of tiny suspended particles whose specific gravity is close to that of water, flotation is one of the most effective methods.

The device is widely used in water supply and drainage treatment projects. First, it is applied in waterworks that use lakes as water sources for algae removal and turbidity reduction. Second, it is used in industrial wastewater treatment projects, such as petrochemicals, textiles, dyeing, electroplating, papermaking, and food industries. Third, it is used for the recovery of useful substances from wastewater, such as fiber recovery in papermaking and pulp water.

pour:

1. The treatment capacity in the table is suitable for the sewage treatment system, and the treatment water volume in the table is based on the reflux ratio R=30% and hydraulic surface load q=5-8m3/m2h.

2. QF,10-QF200 is recommended as steel pool body, and its working load refers to the total load of the foundation under construction when the machine is working normally. QF200~QF600 is recommended as civil pool body, and its working load refers to the total load of the concrete pool body when the machine is working normally.

Technical parameters

Model	Pool diameter (mm)	Processing capacity (m3/h)	Total power of the host (KW)	Working load (t)	Supporting dissolved gas system
QF110	6000	70~100	3.3	28	17
QF150	7000	110~150	3.3	40	21
QF200	8000	160~200	3.3	37	23.5
QF250	9000	210~250	3.3	46	23.5
QF300	10000	260~300	5.2	57	31.5
QF400	110000	310~400	6.2	68	45
QF450	120000	410~480	6.2	81	45
QF500	130000	490~550	6.2	93	46.5
QF600	140000	560~650	6.2	110	46.5

JY type dosing device

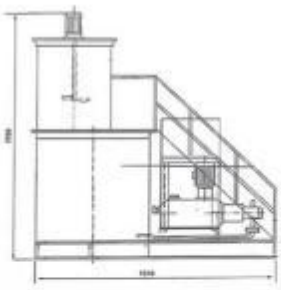
Construction and principle

The JY type dosing device is equipped with a PE material dosing tank, an electric stirrer, two dosing solution tanks, a dosing device and piping, steel platform ladder and other original components to form an integral whole.

The three models of JY type dosing device are composed of three parts:

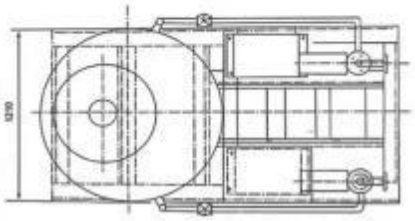
1. Mixer; 2. Solution tank; 3. Metering device and dosing equipment.

This equipment has the characteristics of compact structure easy installation and operation, stable performance, low energy consumption, corrosion resistance and low noise.



applied range

- Dissolution and addition of coagulant, flocculant and disinfectant in water supply engineering.
- Preparation and addition of various acid and alkali solutions.
- Configuration and addition of regeneration liquid in softening and desalination water treatment.
- Configuration and addition of water quality stabilizer for circulating cooling water.



Technical parameters

entry name	parameter	entry name	parameter
Dimensions (mm) L × B×H	1910×1210×2580	Effective volume of dissolution tank (m^3)	0.4
Total power of supporting motor (kw)	11-1.87	Effective capacity of medicine storage tank (m^3)	1.0
Equipment operating weight (g)		3800	
Main technical parameters of supporting equipment			
Blender model	JB-76 is portable type	speed	300r/min	power	0.37kw	Spitting into water depth	700-850(mm)
Model of metering pump	Diaphragm or column Stuffed	flow	According to the design	power	According to the design	working pressure	According to the design
Note: The selected parameters in the table are JY-12 dosing device							

ZY type automatic dry powder dosing device

Construction and principle

The preparation process of polymer solutions is completed through step-by-step handling in individual solution tanks, which are separated to ensure optimal reaction time and constant concentration within each tank, avoiding any direct pathways between the pre-treatment tanks and the final solution tank. The equipment is automatically controlled by a control box connected to a liquid level sensor installed on the final solution tank. Once the liquid level reaches "low," it triggers the electric water inlet valve to open. The contact flow meter then activates the dry injection, with the amount of dry injection determined by the water volume to achieve precise concentration. When the level reaches "high," this cycle stops, although two (or three) agitators continue to operate. This equipment is also used to continuously and automatically prepare standard dilution concentrations (0.3~5g/L) of cationic, anionic, or non-ionic polymers that are gel-like. Although it is generally believed that the maturation time required for gel-like polymers to form standard solutions is much shorter than that for powdered or granular polymers, sufficient maturation time is always recommended during the process to achieve optimal dosage.

Equipment features

- Highly integrated integrated equipment;
- Fully automated control function;
- Small equipment volume, simple operation, easy installation, only water source and power supply on site;
- The medicine mixer is made of stainless steel as a whole, and the solution effect is 100%;
- Safe and reliable operation with stable performance;
- Good corrosion resistance, all media contact is made of engineering plastics and stainless steel;
- It is suitable for powder, fiber, difficult to dissolve, easy to block, high dosage requirements materials, as well as liquid material configuration and dosing;
- Stainless steel low G value efficient special speed reduction stirring machine to prevent the breakage of large molecular chains.

Technical parameters

	Solution preparation capacity (L/H)		Dry powder dosage (Kg/h)	Inlet flow rate (m3/h)	Solution tank		
	Boiling time	Boiling time			Volume (L)	Box Structure	Cabinet material
ZY-450	450	450	0.22-1.1	0.25-1.1	650	Two individual boxes	304
ZY-1000	1000	1000	1.9-8.7	0.5-1.5	1250	Three individual boxes	304
ZY-1500	1500	1500	1.9-8.7	0.6-2.0	1700	Three individual boxes	604
ZY-2500	2500	2500	5.64-26.28	1.0-4.0	2700	Three individual boxes	304
ZY-1500p	1500	1500	1.9-8.7	0.6-2.0	1700	Three individual boxes	PVC/PP
ZY-2500p	2500	2500	5.64-26.28	1.0-4.0	2700	Three individual boxes	PVC/PP
ZY-4000p	4000	4000	11-55	1.56-6.5	4250	Three individual boxes	PVC/PP
ZY-6500	6500	6500	11-55	2.6-10	6720	Three individual boxes	PVC/PP

ZDY drum thickening and dewatering machine

Construction and principle

The sludge is thoroughly mixed with the flocculant solution in the mixer. After flocculation in the sludge feed pipe, it enters a pre-dewatering drum that rotates slowly and is lined with filter cloth. As the sludge passes through the drum under the action of the rotating spiral guide plates, most of the water released during the rapid flocculation process has already been drained through the filter cloth and collected in the clear water trough. At the end of the drum, the pre-dewatered sludge slides down a sloping chute, first onto the upper filter belt, then flipping to the lower filter belt. Here, the remaining free water in the flocs is discharged, and the layer of sludge on the filter belt clearly demonstrates the flocculation structure, helping operators with minimal experience to effectively control and adjust the dosage. The sludge is then sandwiched between the filter belts and continues its journey into the press zone (low-pressure area) and the shear zone (high-pressure area). Here, the water is gradually squeezed out by increasing pressure and shear force. Finally, the dehydrated sludge is discharged through the discharge port, while the filtrate produced by the pre-dewatering drum flows back to the equalization tank.

Equipment features

ZDY type rotary drum concentration and dewatering machine has the advantages of large capacity, high dewatering rate, compact and strong structure, small water consumption, low energy consumption and small flocculant consumption.

applied range

The ZDY drum thickener is a new type of dewatering machinery, primarily used for dewatering sludge with high inorganic content, such as digested sludge, primary sedimentation sludge, biological sludge, and municipal water sludge. Depending on different sludge treatment processes, the machine can add active or inert auxiliary materials to the sludge through a paddle agitator for flocculation, achieving optimal treatment results. This machine is suitable for sludge dewatering in wastewater treatment processes after effluent from sewage treatment plants, municipal water plants, and industries such as dyeing, papermaking, leather, chemical, light industry, electroplating, metallurgy, brewing, and food processing. It can also be used for other purposes

It is a solid-liquid separation equipment for industrial production. It is an ideal equipment for environmental treatment and resource recovery.

Technical parameters

Parameter model		ZDY-500	ZDY-720	ZDY-1000	ZDY-1250	ZDY-1500	ZDY-1750
Belt width (mm)		500	720	1000	1250	1500	1750
Processing capacity (m³/h) when concentration		3.5-4.7	4.5-6.2	6.5-11.5	7.5-13.7	11.4-22.6	14.5-26.5
Absolute dry weight (kg/hr)		60-82	75-125	85-175	115-208	190-320	225-385
Moisture content of mud cake (%)		83-85	83-85	83-85	83-85	83-85	83-85
Power consumption (HP)	Filter belt drive machine (Variable frequency speed regulation)	1/2	1/2	1/2	1/2	1	1
	Conditioning mixer	1/4	1/4	1/2	1/2	1	1
	Drum concentrator	1/4	1/4	1/2	1/2	1	1
		have	have	have	have	have	none
Appearance size	L (Long)	3680	3680	3800	3700	3250	3300
	W (width)	1650	1880	1530	1800	2150	2400
	H (high)	2190	2200	2350	2350	2300	2300
Base size (mm)		2180×836	2180×1066	2180×1330	2180×1586	2430×1840	2430×2090

ND type screw Concentrating dehydrator

Construction and principle

When the equipment is in operation, sludge enters the filter cylinder through the feed opening and is pushed towards the discharge opening by the spiral blades on the shaft. As the pitch between the spiral blades gradually decreases, the pressure on the sludge increases continuously. Under the effect of this pressure difference dewatering begins, with water flowing out from the gap between the fixed plate and the moving plate. The equipment also relies on the cleaning function between the fixed plate and the moving plate to clean the filter gap and prevent blockage. After thorough dewatering, the cake is discharged from the discharge opening under the drive of the spiral shaft.

The main components include a spiral feed shaft, multiple fixed plates, and multiple moving plates. There is a gap between the fixed plates and the moving plates, with an adjustment shim between them. The machine consists of two functional areas: the first section at the sewage inlet is called the concentration chamber, where a large number of filter layers in the incoming sewage are concentrated and discharged. The second section at the sludge outlet is called the dewatering chamber, where the concentrated sludge is further compressed and dehydrated by the spiral feed shaft to form a filter cake, which is then discharged from the machine.

Equipment features

- High sludge dewatering efficiency, filter cake moisture content 75~80%
- No filter screen, never clogged, self-cleaning function, no need to clean water; save water, suitable for dewatering oily sludge, especially suitable for food, daily chemical, petrochemical, medicine and other industries sludge dewatering;
- Low speed operation: small size, low power consumption, saving electricity;
- The whole machine can be fully automatic operation; it can realize unattended operation and save labor force; it can directly feed the aeration tank for treatment, without sludge concentration tank and storage tank, so as to save investment costs; thus reducing the phosphorus content in sewage and improving the dephosphorization function;
- Simple structure, low-speed operation, noise-free and vibration-free, minimal wear, and low maintenance costs; available in ultra-small sizes, with a main filter only 100 millimeters in diameter, suitable for various medium and small wastewater treatment plants, especially for sludge dewatering in small, ultra-small factories, hotels, hospitals, schools, and other facilities. Operating in a relatively enclosed state, it reduces the generation of secondary sewage and odor pollution.

Technical parameters

Model		DS standard processing capacity		Theoretical reference for sludge treatment capacity (specific treatment capacity is determined by the coagulation effect of sludge and chemicals)					
		Low concentration → High		2000mg/L	5000mg/L	10mg/L	20000mg/L	25000mg/L	50000mg/L
131		~6kg/h	~10kg/h	~3m3h	~12m3/h	~1m³/h	0.5m3/h	~0.4m³/h	~0.2m³/h
	132	~12kg/h	~20kg/h	~6m3/h	~2.4m³/h	~2m³/h	~1m/h	~0.8m³/h	~0.4m3/h
201		~9kg/h	~15kgh	~4.5m3/h	~18m³/h	~1.5m3h	~0.75m³h	~0.6m3h	~0.3m³/h
	202	~18kg/h	~30kgh	~9m3h	~3.6m3/h	~3m3/h	~1.5m³/h	~12m3/h	~0.6m3h
301		~30kg/h	~50kg/h	~15m3h	~6m³/h	~5m3/h	~2.5m3/h	~2m3/h	~1m³/h
	302	~60kg/h	~100kgh	~30m³/h	~12m³/h	~10m³/h	~5m3/h	~4m3/h	~2m/h
	303	~90kg/h	~150kgh	~45m3h	~18m3/h	~15m³/h	~7.5m3h	~6m³/h	~3m³/h
401		~90kg/h	~150kg/h	~45m³/h	~18m3/h	~15m³h	~7.5m3/h	~6m3/h	~3m3/h
	402	~180kg/h	~300kg/h	~90m/h	~36m3/h	~30m3h	~15m³h	~12m³h	~6m³h
	403	~270kg/h	~450kg/h	~135m3/h	~54m3/h	~45m3/h	~22.5m3/h	~18m3/h	~9m³h
		~360kgh	~600kgh	~180m3/h	~72m3/h	~60m³h	~30m3h	~24m3/h	~12m³h

DDY type belt thickening and dewatering machine

Construction and principle

The whole process of DDY belt filter press can be divided into four basic stages: sludge flocculation, gravity dewatering, filter press dewatering and filter belt cleaning.

Sludge Flocculation: Before dewatering, sludge must first undergo the flocculation process. Flocculation involves pre-treating suspended solids with a flocculant. The flocculant is mixed with the sludge through stirring, causing the solid particles in the suspension to adhere and form flocs, which separates the solid phase from the liquid phase. A small amount of coagulant aid is also added to enhance the flocculation effect.

Gravity Dewatering: To more effectively reduce the fluidity of sludge before pressing, it is necessary to remove more free water. The filter belt section has an upward incline angle. The friction coefficient between the sludge, free water, and this belt differs; as the sludge moves up the belt, it carries away the free water. The mud dispersing device spreads the sludge evenly on the surface of the filter belt, further enhancing the dewatering effect.

Press Dewatering: After gravity dewatering, the sludge moves into the wedge press zone between the upper and lower filter belts as the belt moves, undergoing pre-press dewatering. It then enters the "S" -shaped pressing area, where the shear force generated by the sludges alternating bending between multiple rollers extracts internal free water.

Equipment features

- The water content of the pressed mud is low, up to 75%;
- Mechanical and electrical dual safety protection;
- Good corrosion resistance, low energy consumption and high separation efficiency.

application area

The DDY-type belt press dewatering unit is suitable for sludge dewatering processes in wastewater treatment at urban domestic sewage plants, waterworks, as well as in the papermaking, petrochemical, coal, light textile, food, pharmaceutical, and brewing industries. It is also applicable to solid-liquid separation processes in some industrial production, making it an ideal device for environmental management and material recovery. Compared with other dewatering machines, this unit boasts high processing capacity, low energy consumption, excellent dewatering performance, easy maintenance and operation, low operating costs, safety and reliability, and the ability to produce continuously and automatically.

Technical parameters

Model	DDY500	DDY1000A	DDY1500A	DDY1500B	DDY2000A	DDY2000B	DDY2500A	DDY2500B
Mud cake moisture content%	75~80							
Amount of flocculant added %	1.8~2.4							
Dry mud production volume	100~120	200~230	300~360		400~460		470~550	
Considering the running speed of	1.57~5.51	1.04~4.5						
Main motor power kw	0.75	1.1					1.5	
Mud medicine wet sealer function Rate kw	0.25	0.25	0.37					
Effective width of the filter strip	500	1000	1500		2000		2500	
Water consumption m/h	6.2	11.2	16	17.6	20.8	22.4	24.1	25.2

If you need more information please contact:
Hosam Najem P. Eng
Representative Manager
PESCO INTERNATIONAL LTD
hnajem@pesco-kw.ca
cell: +1(548)881-0119