

Industry Professionals Work To Source-oriented



WUXI GONGYUAN ENVIRONMENTAL EQUIPMENT & TECHNOLOGY CO.,LTD

Add: No.55 West Xigang Road, Xishan District, Wuxi, China

Tel: 86-0510-85950018

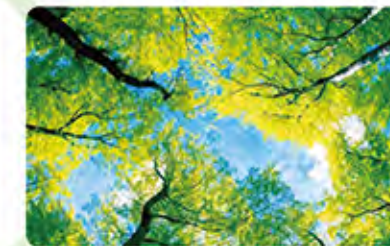
Fax: 86-0510-85950258

Web: www.wxgyhj.com

E-mail: sales@wxgyhj.com



**GONGYUAN
ENVIRONMENTAL**



**Professional Water Treatment
Equipment Supplier**

**WUXI GONGYUAN ENVIRONMENTAL
EQUIPMENT & TECHNOLOGY CO.,LTD**

Company Introduction

Located in the beautiful industrial city—Xishan district of Wuxi, Wuxi Gong Yuan Group, as a professional developer and manufacturer of water treatment equipment, is a provincial private scientific and technological enterprise who has contracted an alliance with CAS, Jiangnan University, and Changzhou University. Consisted of three subsidiary corporations—Wuxi Gong Yuan mechanical corporation, Wuxi Gong Yuan environmental corporation, Wuxi Gong Yuan automatic corporation, Gong Yuan Group insists on the concept of “industry professionals work to source-oriented”, focusing on improving water environment, enhancing automation level and providing cost-effective technical equipment and services.

Our realistic, innovative Gong Yuan teams continuously apply our many-year rich experiences into various conventional projects and more than 4900 water treatment problems flexibly. We have won the praise of customers.

Gongyuan Group main products and service include: DAF, lammella clarifier, sludge dewatering system, polymer dosing unit and other auxiliary water treatment equipment. We have senior technician who can design and provide the integrated solutions. At the same, we have modernized laboratory, advance and precise detecting instrument to test your wastewater sample. We has worked with Jiangnan University by establishing R&D center which can provide technical support.

Wuxi Gong Yuan Group adheres to the core value of product quality and corporate reputation. Registered on 28th March, 2010, we have got the trademark of “Gong Yuan” from State Trademark Bureau. In April of that year, our products have been awarded by China Light Product Quality Assurance Center as “National Quality Trustworthy Product”. Meanwhile, we have got high recognition from counterparts and customers in the 7th China Water Industry Selection and had the reputation of “China’s best water treatment products supplier of 2010”. In 2011, Wuxi Gong Yuan has been assessed as CCEC demonstration unit (Five Star) by international corporation center of NDRC and CNNIC. Also, we obtained the certificate of “Wuxi AAA grade enterprise of observing contract and keeping promise” by the municipal government. In May, 2013, our company was confirmed as Jiangsu private-own technical enterprise by the department of science and technology, Jiangsu provincial government. In November of 2014, our company has been recognized as high and new tech enterprise of Jiangsu province. Our trademark has confirmed as well-known trademark of Wuxi city. Gongyuan Group also achieved Yangtze River Delta Innovation Benchmarking Enterprises, China Environmental Protection Federation AAA grade credit certificate, China Bidding and Purchasing Network AAA Grade credit certificate, etc.

In the aspect of intellectual property right, Gongyuan Group firstly and successfully passed intellectual property management system certification. In 2018, we have been appraised as a strong intellectual property enterprise in Jiangsu province. Until now, our products have been exported USA, Mexico, Japan, Korea, Canada, Russia, Tadzhikistan, Uzbekistan, Singapore, Malaysia, Thailand, Vietnam, India, Iran, Kuwait, Indonesia, Nigeria, Congo, etc. There are over 2000 successful projects in the world over 20 countries and district.

We are looking forward that our high-qualified rich products and professional services will make greater contribution to you on the improvement of water environment!



GYE—Professional water treatment equipment supplier

Our customer and user's certification



CONTENTS

DAF

Horizontal DAF	01
Multiphase Mixture DAF	05
Cavitation Air Flotation	07
Superifical DAF	09
Vertical DAF	12
Other DAF Type	13
Chain-plate Skimmer	14
Micro-nano Bubble Generator	15

Lamella Clarifier

Lamella Clarifier	16
-------------------	----

Chemical Dosing Unit

GJY Type Chemical Dosing Unit	18
GPT Type Automatic Dosing Unit	19

Sludge Scraper

ZG Sludge Scraper	20
ZGA Sludge Scraper	21

Sludge Dewatering System

Screw Press	22
-------------	----

Other Auxiliary Equipment

Rotary Drum Screen	25
Mechanical Bar Screen	27
Static Screen	29

Horizontal DAF

1. DAF Introduction

Dissolved air flotation (DAF) is a water treatment process that clarifies wastewaters (or other waters) by the removal of suspended matter such as oil or solids. The removal is achieved by dissolving air in the water or wastewater under pressure and then releasing the air at atmospheric pressure in a flotation tank basin. The released air forms tiny bubbles which adhere to the suspended matter causing the suspended matter to float to the surface of the water where it may then be removed by a skimming device.

2. Features

- ※ Small footprint, lower energy consumption; easy operation and simple management
- ※ High efficiency of air dissolving, stable treatment effects;
- ※ This unit uses our GFA dissolved air system with ingenious structure. Its efficiency of air dissolving can reach up to 90%. Compared with traditional dissolved air system, our new dissolved air system has about one-fifth volume. What's more, it has strong anti-clogging capacity.
- ※ Use new type of dissolved air releaser, high releasing degree, the average particle size of micro bubbles is about 15-30um.
- ※ Use chain-plate skimmer, stable operation and high efficiency of scraping.



3. Working Principle

GF Type combined DAF consists of flotation tank, dissolved air system, reflux pipe, dissolved air released system, skimmer (Based on customer needs, there are combined type, traveling type and chain-plate type to choose.), electric cabinet and so on.

Air flotation separation technology dissolves air into water at certain working pressure. In the process, pressurized water is saturated with dissolved air and is discharged into a flotation vessel. The microscopic air bubbles produced by released air attach to suspended solids and float them to the surface, forming a sludge blanket. A scoop removes the thickened sludge. Finally, it complete purifies the water.

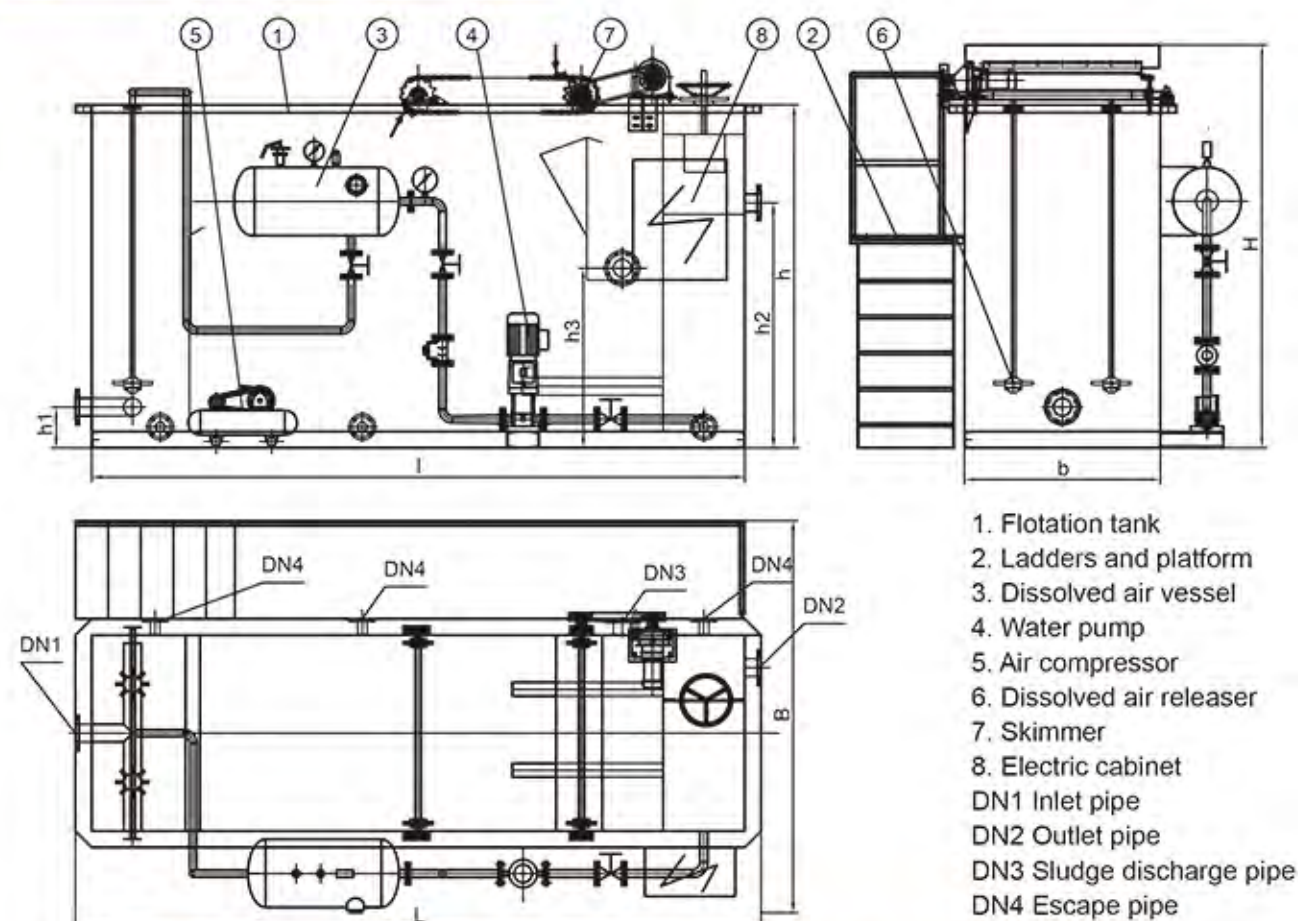
Air flotation technology plays an important in solid-liquid separation. (simultaneously reduce COD, BOD, chroma, etc). Firstly, mix flocculating agent into raw water and stir thoroughly. After the effective retention time (lab determines the time, dosage and flocculation effect), the raw water enters into the contact zone where microscopic air bubbles adhere to the floc and then flows into the separation zone. Under the buoyancy effects, the tiny bubbles float the flocs to the surface, forming a sludge blanket. A skimming device removes the sludge into the sludge hopper. Then the lower clarified water flows into the clean-water reservoir through the collecting pipe. Some of water are recycled to the flotation tank for the air dissolving system, while others will be discharged.

4. Application

Dissolved air flotation is very widely used in treating the industrial wastewater effluents from oil refineries, petrochemical and chemical plants, natural gas processing plants, paper mills, general water treatment and similar industrial facilities. Such as electroplating, food, slaughtering, brewing, tanning, printing, and dyeing, paper making.

5. Technical Data Sheet

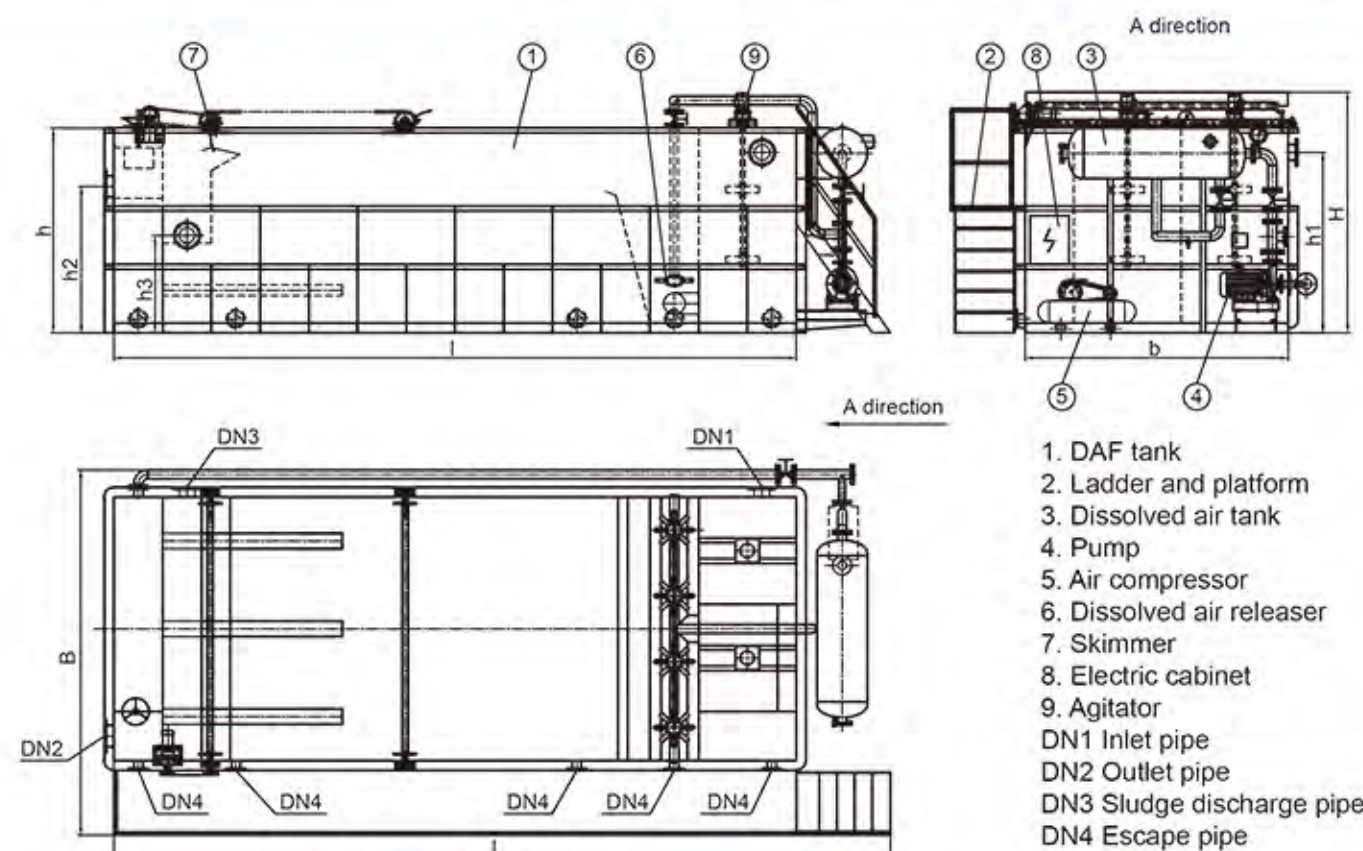
Model	Capacity (m³/h)	Dissolved air volume (m³/h)	Main motor (kw)	Air compressor (kw)	Skimmer (kw)	Blender (kw)×2	Total power (kw)	
							Reaction exclude	Reaction included
GF-1	0.5-1	0.3-0.5	0.55	0.55	0.18	0.37×2	1.28 / 2.02	
GF-2	1-2	0.5-0.8	0.55	0.55	0.18	0.37×2	1.28 / 2.02	
GF-3	2-3	1-1.5	1.1	0.55	0.2	0.4×2	1.85 / 2.65	
GF-5	3-5	1.5-2	1.1	0.55	0.2	0.4×2	1.85 / 2.65	
GF-10	5-10	3-4	1.5	0.75	0.2	0.4×2	2.45 / 3.25	
GF-15	10-15	4-5	2.2	0.75	0.4	0.75×2	3.35 / 4.85	
GF-20	15-20	5-7	2.2	0.75	0.4	0.75×2	3.35 / 4.85	
GF-30	20-30	8-12	5.5	0.75	0.4	0.75×2	6.65 / 8.15	
GF-40	30-40	10-15	5.5	0.75	0.4	0.75×2	6.65 / 8.15	
GF-50	40-50	15-18	7.5	1.5	0.4	0.75×2	9.4 / 10.9	
GF-60	50-60	18-20	7.5	1.5	0.4	0.75×2	9.4 / 10.9	
GF-70	60-70	20-25	11	2.2	0.4	0.75×2	13.6 / 15.1	
GF-80	70-80	25-30	11	2.2	0.4	0.75×2	13.6 / 15.1	
GF-100	80-100	35-40	15	2.2	0.4	0.75×2	17.6 / 19.1	
GF-150	120-150	40-50	15	2.2	0.4	1.1×2	17.6 / 19.8	
GF-200	180-200	70-80	22	4	0.4	1.1×2	26.4 / 28.6	

6. Outside Drawing For Reference

Table 1 GF type DAF (excluding reaction tank) outside drawing

Model	L	B	H	I	b	h	h1	h2	h3	DN1	DN2	DN3	DN4
GF-1	1500	1000	1300	1400	550	1080	150	800	750	50	32	50	32
GF-2	1960	1200	1600	1800	700	1300	200	1000	850	50	50	50	32
GF-3	3000	2100	2300	2800	800	1900	250	1400	900	80	50	80	50
GF-5	3200	2300		3000	1000					80	80	80	50
GF-10	4200	2500	2500	4000	1200	2100	300	1500	1000	100	100	150	80
GF-15	4700	2800		4500	1500					125	100		
GF-20	4700	3100		4500	1800					150	125		
GF30	5700	3400		5500	2000					200	150		
GF-40	7200	3300	2500	6000	2200	2100	300	1500	1000	200	150	150	80
GF-50	7200	3800		6000	2700					250	200		
GF-60	8200	3900		7000	2800					250	200		
GF-70	9200	4100		8000	3000					250	200		
GF-80	10200	4400	2500	9000	3200	2100	300	1500	1000	300	250	150	80
GF-100	10200	4800		9000	3600					300	250		

Note: The above information is for reference only. Our company will reserve the modifying right of the above specification.

Please ask for the actual installation dimension and piping layout before ordering based on the different sewage and water quality.


Table 2 GF Type DAF (including reaction) outside drawing

Model	L	B	H	I	b	h	h1	h2	h3	DN1	DN2	DN3	DN4
GF-1T	1800	1000	1300	1700	550	1080	150	800	750	32	32	50	32
GF-2T	2360	1200	1600	2200	700	1300	200	1000	850	50	50	50	32
GF-3T	3460	2100	2300	3300	800	1900	200	1400	900	50	50	80	50
GF-5T	3660	2300		3500	1000		250			80	80	80	50
GF-10T	4700	2500	2500	4500	1200	2100	1900	1500	1000	100	100	150	80
GF-15T	5200	2800		5000	1500					100	100		
GF-20T	5200	3100		5000	1800					125	125		
GF30T	7200	3100		6000	2000					125	150		
GF-40T	8200	3300	2500	7000	2200	2100	1850	1500	1000	150	150	150	80
GF-50T	8200	3800		7000	2700					150	200		
GF-60T	9200	3900		8000	2800					200	200		
GF-70T	10200	4100		9000	3000					200	200		
GF-80T	11200	4400	2500	10000	3200	2100	1550	1500	1000	200	250	150	80
GF-100T	11700	4800		10500	3600					200	250		

Other GF type DAF except the above models can be designed and manufactured according to the customer need. For detailed parameters, please connect us.

Note: The above information is for reference only. Our company will reserve the modifying right of the above specification.

Please ask for the actual installation dimension and piping layout before ordering based on the different sewage and water quality.

Multiphase Mixture DAF

1. DAF Introduction

Our multiphase mixture DAF, also called air-liquid mixing pump DAF, uses the multiphase pump (such as Japanese Nikuni, Germany Edur pump) to produce micro bubbles, without requiring of air compressor and dissolved air tank. Due to its special hydraulic parts design, the pump can fully mix up with the liquid in a highly dispersed state, like a dynamic mixer.

2. Features

- ※ No need of air compressor and pressure vessel.
- ※ Save operating cost, floor space and investment.
- ※ Simple, compact and maintenance -free.

3. Working Principle

The performance of GDXF is mainly determined by the gas content in the multiphase mixture liquid. When pump inhales liquid, it forms negative pressure at the pump inlet where air is inhaled through suction hole and liquid. Then air is dissolved into water by high speed rotating pump impeller. By adjusting operating points and solid-liquid proportion, it can achieve massive dispersed micro-bubbles or meet maximum carrying capacity. Based on different pump specification, gas content in liquid can reach 30%. When this saturated water (over-saturated water) flows into dissolved air vessel, it can instantly release high-density micro-bubble whose average diameter is less than 30 through release device after a certain period of time.

Finally, flocculating sewage mixes up with these micro-bubble after entering into the flotation tank. Then these micro-bubbles attach to the suspended solids and float them to the surface. These suspended solids rely on the micro-bubbles to sustain the water surface, forming a floating layer on the surface of the unit. The floating layer is removed into scum tank by means of a skimming device.



4. Application

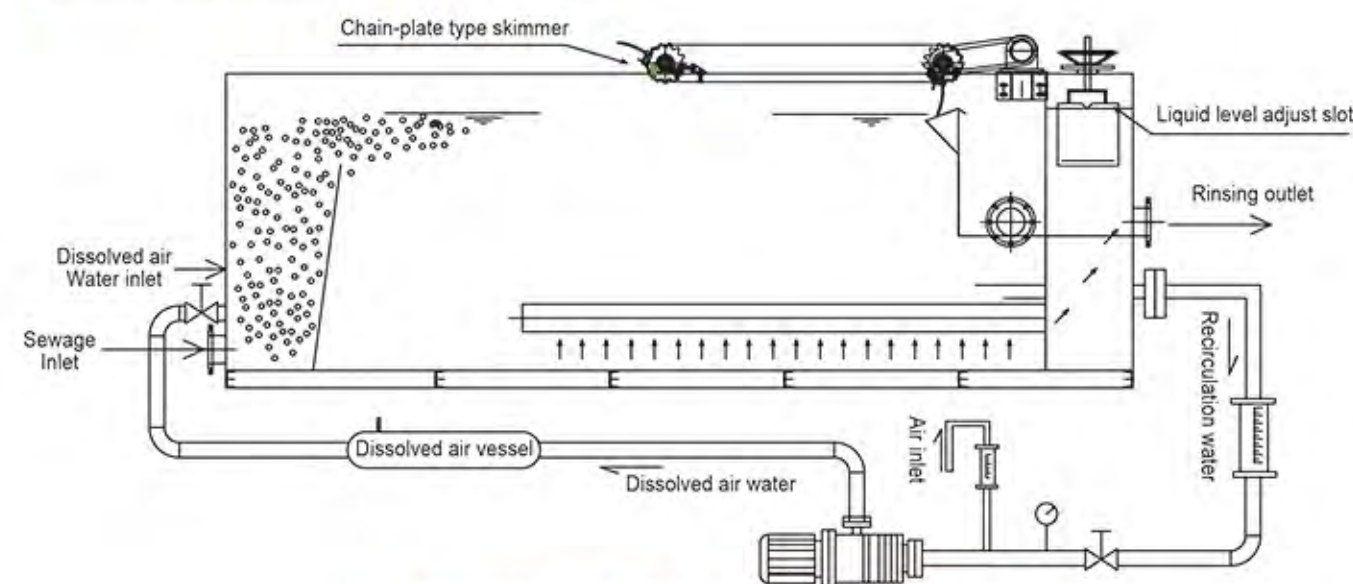
GDXF Type dissolved air flotation is suitable for:

- ※ Disposal of oily waste water treatment in petrochemical industry.
- ※ Oily waste water treatment and reinjection water in oil exploitation industry.
- ※ Disposal of slaughter waste water in meatpacking industry.
- ※ Grease and effluent treatment in dairy industry.
- ※ The treatment of effluents generated by the pulp and paper industries.
- ※ Oily waste water treatment in machinery processing industry.

5. Technical Data Sheet

Model	Capacity (m³/h)	Length (m)	Width (m)	Depth (m)	Multiphase Pump (kw)	Skimmer (kw)	Total power (kw)
GDXF-3	3	2.5	0.8	1.9	1.1	0.2	1.3
GDXF-5	5	3.0	1.0	1.9	1.1	0.2	1.3
GDXF-10	10	4.0	1.2	2.1	2.2	0.2	2.4
GDXF-15	15	4.5	1.5	2.1	3.0	0.4	3.4
GDXF-20	20	4.5	1.8	2.1	3.0	0.4	3.4
GDXF-30	30	5.5	2.0	2.1	4.0	0.4	4.4
GDXF-40	40	6	2.2	2.1	4.0	0.4	4.4
GDXF-50	50	6	2.7	2.1	4.0	0.4	4.4
GDXF-60	60	7	2.8	2.1	5.5	0.4	5.9
GDXF-70	70	8	3.0	2.1	5.5	0.4	5.9
GDXF-80	80	9	3.2	2.1	11	0.4	11.4
GDXF-100	100	9	3.6	2.1	15	0.4	15.4

6. Outside Drawing For Reference



GDXF Type DAF Schematic Diagram

Cavitation Air Flotation

1. CAF Introduction

CAF (Cavitation air flotation), is a patented solid-liquid separation technology especially used for removing oil and grease, jelly and SS. By using of aerator, CAF's special designed impeller can distribute the micro bubbles into the sewage evenly without any complicated air dissolving process. Then this will not have any blocking phenomena.

2. Features

- ✧ No need of reflux pump, air compressor and pressure vessel.
- ✧ Save operating cost, floor space and investment cost.
- ✧ Simple, compact and maintenance-free.
- ✧ Especially suit for oily wastewater treatment.

3. Working Principle

CAF (cavitation air flotation) is composed of aerator, flotation tank, skimmer and electric cabinet. The aerator will generate air bubbles through its highly speed rotating motor by way of absorbing air and then this micro bubbles will be distributed in the sludge water tank via stainless steel bulk air impeller.

Utilizing the centrifugal force caused by high speed rotating driven impeller, aerator produces negative pressure and suck other gas into aeration port. Then the air is released again by submerged aeration port. When the bores on the perforated impeller produce bubbles, high speed rotating impeller will cut bubbles into 30-100um tiny bubbles. Finally, flocculating sewage mixes up with these micro-bubble after entering into the flotation tank. Then these micro-bubbles attach to the suspended solids and float them to the surface. These suspended solids rely on the micro-bubbles to sustain the water surface, forming a floating layer on the surface of the unit. The floating layer is removed into scum tank by means of a skimming device.

4. Application

Cavitation air flotation is suitable for:

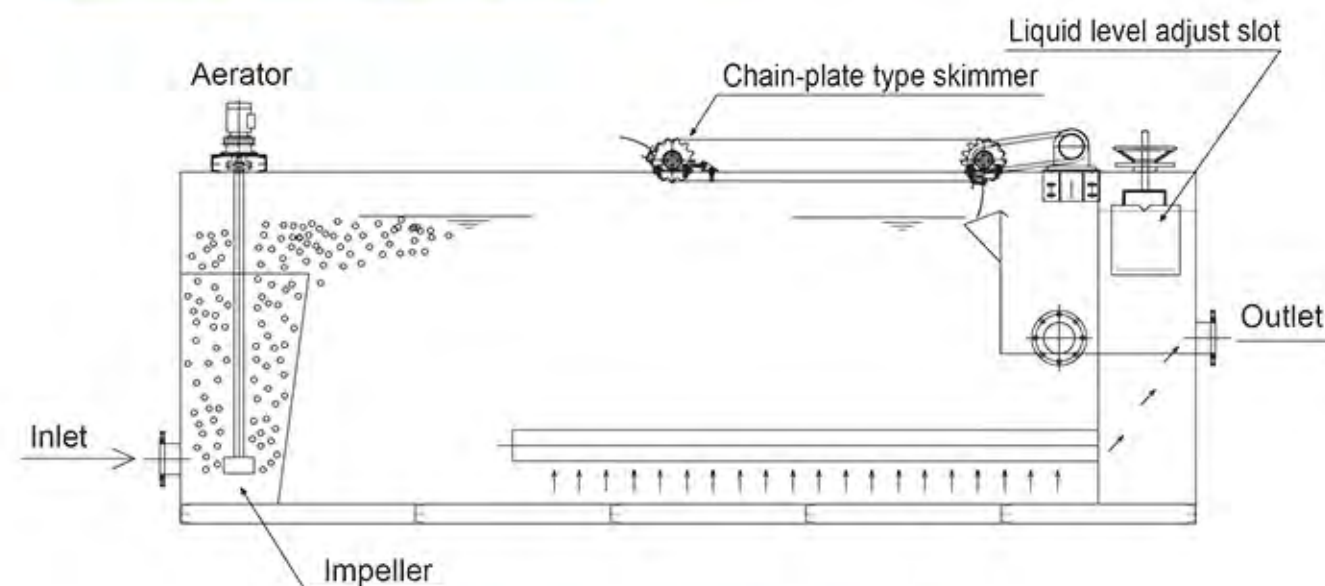
- ✧ Disposal of oily wastewater in petrochemical industry.
- ✧ Oily wastewater treatment and reinjection water in oil exploitation industry.
- ✧ Disposal of slaughter wastewater in meatpacking industry.
- ✧ Grease and effluent treatment in dairy industry.
- ✧ The treatment of effluents generated by pulp and paper industries.



5. Technical Data Sheet

Model	Capacity (m³/h)	Length (m)	Width (m)	Depth (m)	Aerator (kw)	Skimmer (kw)	Total power (kw)
GWAF-1	1	1.4	0.55	1.1	0.37	0.18	0.55
GWAF-3	3	2.5	0.8	1.3	1.5	0.2	1.7
GWAF-5	5	2.5	1	1.3	1.5	0.2	1.7
GWAF-10	10	3	1.2	1.3	1.5	0.2	1.7
GWAF-15	15	4	1.2	1.3	2.2	0.4	2.6
GWAF-20	20	5	1.2	1.3	2.2	0.4	2.6
GWAF-30	30	5	1.6	1.8	2.2	0.4	2.6
GWAF-40	40	6	1.6	1.8	2.2	0.4	2.6
GWAF-50	50	6	1.8	1.8	4.4	0.4	4.8
GWAF-75	75	7	2.4	1.8	4.4	0.4	4.8
GWAF-100	100	8	2.4	1.8	4.4	0.4	4.8
GWAF-150	150	11.5	2.4	1.8	6	0.4	6.4
GWAF-200	200	15	2.4	1.8	9	0.4	9.4
GWAF-300	300	15	3.1	1.8	12	0.4	12.4
GWAF-400	400	17	3.6	1.8	12	0.4	12.4
GWAF-500	500	21	4.5	1.8	15	0.4	15.4

6. Outside Drawing For Reference



CAF Schematic Diagram

Superifical DAF

1. Superifical DAF Introduction

Our Gongyuan GQF Type Superifical DAF is an advanced quick-speed flotation system integrated with flocculation, flotation, skimming and mud scrapping. Based on the traditional flotation theory, we also use the "shallow theory" and "principle of zero speed" successfully. Thus our superficial air flotation is widely applied in waterworks removing alga, varec and other turbid water from nature lake and river; Industrial sewage treatment projects such as petro-chemical, textile, printing and dyeing, electroplating, tanning, food industry and other fields; Recycling useful material in sewage like fibre recovery on paper & pulp industry.

2. Features

- ※ Shallow effective water depth: 750mm~950mm.
- ※ Short hydraulic retention time: 5~10min.
- ※ Large purification capacity, namely high surface load.
- ※ Small footprint, light unit load, all prefabricated assembly, overhead installation or multi-layer combination mounting.
- ※ Low cost of installation and maintenance, easy to clean.
- ※ High purification degree, algae and other suspended solids removal rate over 90%, thickened sludge concentration can reach 35%.
- ※ Our superficial DAF will use GFA Type dissolved air system with its ingenious structure. The GFA dissolved air system has the strong anti-clogging ability.



3. Structure And Its Working Principle

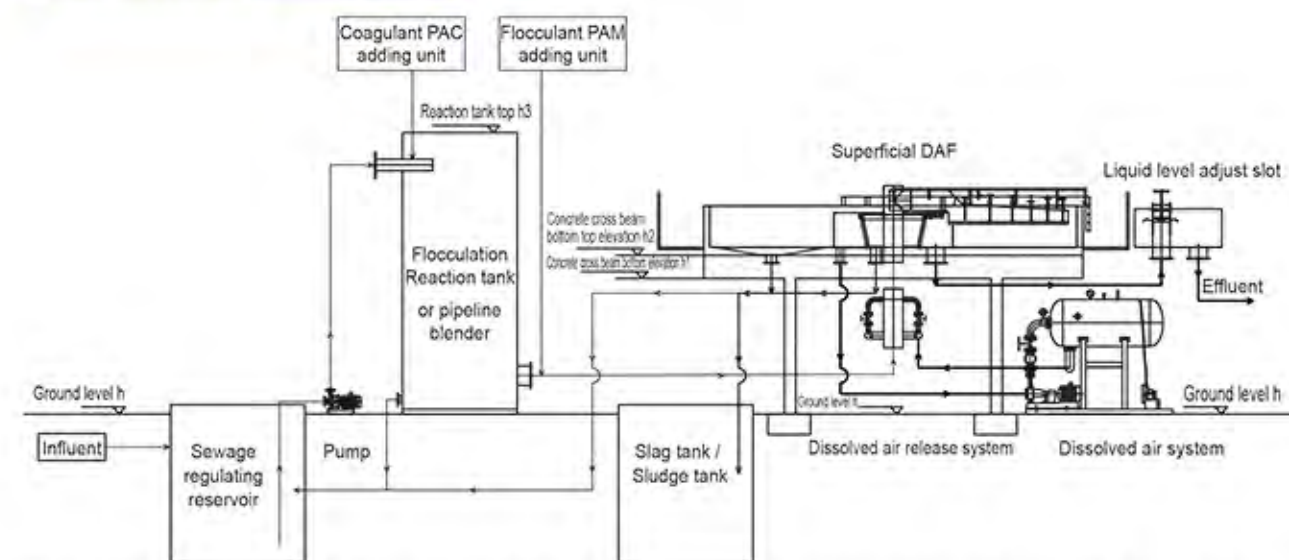
Air-floated separation technology is a very good way of purifying water from suspend solid by releasing pressed saturated air water to make its generated air micro bubble contacting with suspended floc fully, which will form flotation sludge to be scrapped out of water by its scraper.

Our device is an advanced quick-speed floatation system with all flocculation, floatation, skimming, mud scrapping together under successful use of the "shallow theory" and the "principle of zero speed" to gain high efficiency.

In order to make up shortcomings of the traditional unit, we design raw water inlet and purified water outlet as movable to save bubble floating time of raw water, namely, while raw water is flowing into the tank, the pool pipe water flow opposite way to make raw water in the pool nearly in static condition, by this way, the bubble can float to the surface quickly like SS flotation speed (4-10 minutes), meanwhile, the purified water can be drained out when its pipe move here. Due to its compact round design with inlet and outlet pipes installed on rotating rack to generate centripetal moving with nearly zero speed, which will make the suspended solid fast floats on original water surface and then been purified within 3 minutes.

This equipment is cylindrical and compact in structure, including flotation tank, rotating water distributor, dissolved air release system, rotating rack, water collection device, scum skimmer, dissolved air system, reflux pipe, electric cabinet and etc. Inlet, outlet and sludge discharge outlet are all installed on the rotating area where water distributor, water collection device, dissolved air release system are connected to frame closely, rotating around the flotation tank center. This device provides module integrated equipment assembly by adopting both centralized and decentralized control system to realize the best operating condition.

4. Process Flow Diagram



Remarks: Due to the special construction of superficial DAF, it determines the strict request of the height. Ground level h; Concrete cross beam bottom elevation h1; Concrete cross beam bottom top elevation h1; Reaction tank top h3. Generally, if there is following requirements, special conditions can be talked separately. h3-h2 is more than 2200mm (Based on the site piping layout, there is few differences) h1-h is more than 2000mm (otherwise dissolved air system can't be arranged under the DAF equipment.)



5. Main Technical Data Sheet

Table 1

Capacity	10~800m³/h	Reflux Ratio	30%
Tank Depth	900~1100mm	Dissolved Air Pressure	≥0.4MPa
Effective Depth	750~950mm	Designed Speed	1/5~1/10rpm
Hydraulic Retention time	5~10min	Hydraulic Surface Loading	6~8m³/m².h

Table 2

Model	Tank Diameter (m)	Capacity (m³/h)	Drive motor (kw)	Skimmer (kw)	Pump (kw)	Air compressor (kw)	Total power (kw)
GQF-10	Φ2	5~10	0.75	0.75	1.5	0.75	4.45
GQF-30	Φ3	20~30	1.1	0.75	3	0.75	5.6
GQF-50	Φ4	40~50	1.1	1.1	7.5	1.5	11.2
GQF-70	Φ5	60~70	1.5	1.1	11	2.2	15.8
GQF-100	Φ6	80~100	1.5	1.1	15	2.2	19.8
GQF-150	Φ7	120~150	1.5	1.1	15	2.2	19.8
GQF-200	Φ8	180~200	2.2	1.5	22	4	29.7
GQF-250	Φ9	220~250	2.2	1.5	22	4	29.7
GQF-300	Φ10	280~300	2.2	1.5	30	5.5	39.2
GQF-400	Φ11	350~400	2.2	1.5	30	5.5	39.2
GQF-500	Φ12	450~500	3	2.2	45	7.5	57.7
GQF-600	Φ13	550~600	3	2.2	45	7.5	57.7
GQF-700	Φ14	650~700	3	2.2	55	7.5	67.7
GQF-800	Φ15	750~800	3	2.2	75	11	91.2

Vertical DAF

1. Introduction

GSLF vertical DAF has the same working principle with other DAF. But for the structure, we have made some adjustment. GSLF type vertical DAF has cylindrical tank, using central water distribution and peripheral outflow. The separation zone is better for sludge floating and thickening. For the small volume, it has been widely applied in WWTP reconstruction project.

2. Features

- ※ Less land occupation.
- ※ High surface load.
- ※ Simple operation and easy maintenance.

3. Applied Range

Vertical DAF has been mainly applied in:

- ※ Electroplating industry.
- ※ Tannery industry.
- ※ Dyeing and printing industry.
- ※ Slaughtering and breeding industry.
- ※ Other floating sewage treatment.
(solid-liquid separation and oil-liquid separation)

4. Composite

Tank, dissolved air system, pipe system, skimming system, electric control system, ladder and platform.

5. Main Technical Data Sheet

Model	Capacity (m³/h)	Size (mm)	Pump (kw)	Air compressor (kw)	Skimmer (kw)	Power (kw)
GSLF-1	0.5-1	Φ800×1900	0.55	0.55	0.2	1.3
GSLF-3	2-3	Φ1200×2100	1.1	0.55	0.2	1.85
GSLF-5	3-5	Φ1500×2600	1.1	0.55	0.2	1.85
GSLF-10	5-10	Φ1800×2800	1.5	0.75	0.2	2.45
GSLF-20	10-20	Φ2200×3000	2.2	0.75	0.4	3.35
GSLF-30	20-30	Φ2600×3200	5.5	0.75	0.4	6.65
GSLF-40	30-40	Φ3000×3500	5.5	0.75	0.4	6.65
GSLF-50	40-50	Φ3000×4000	7.5	1.5	0.4	9.4

The parameters and pictures listed are for reference only. Gongyuan reserves the right of continuous improvement. All parameters are subject to confirmation by both parties.



Other DAF Type

1. Sedimentation DAF



2. Double-effect DAF



3. Experimental DAF



Chain-plate Skimmer

1. Overview

GLG Series chain-plate type skimmer is used for scraping and skimming for various kinds of rectangle flotation tanks.

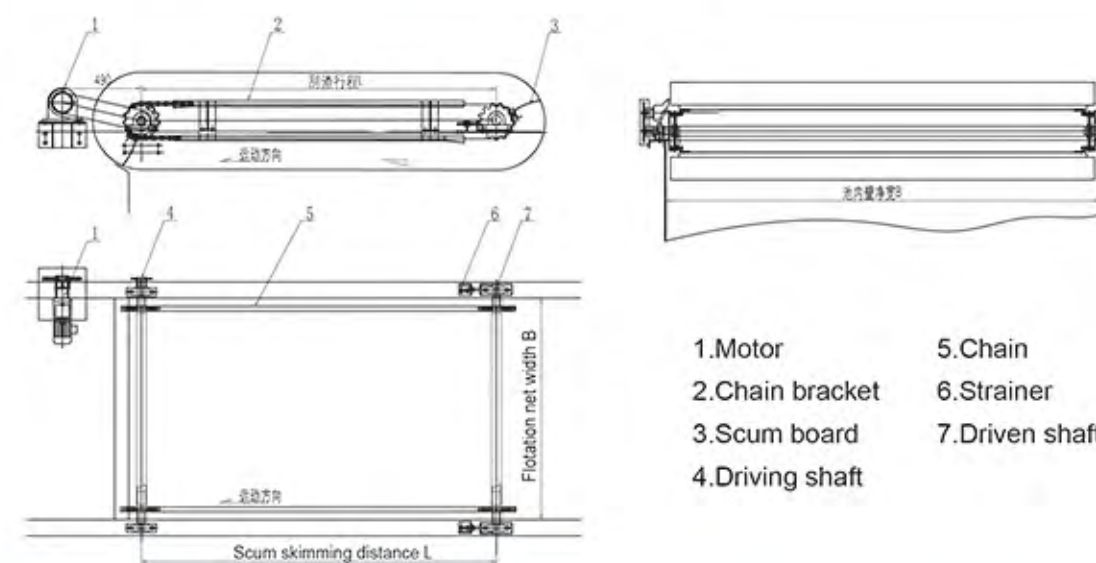
2. Type and Its Indication

GLG - Net width(m)
Chain-plate type skimmer



3. Components

This kind of skimmer is composed of motor, chain bracket, driving shaft, chains, strainer, driven shaft and so on.



GLG Series chain-plate type skimmer technical parameters

Motor	Flotation net width B (m)	Scum skimming distance L (m)	Motor Power (kw)	Distance Between Pool Top And Water Surface (mm)
GLG-0.5	0.5	1~3	0.37	200~250
GLG-1	1	1~3	0.37	
GLG-2	2	1~5	0.37	
GLG-3	3	1~5	0.55	
GLG-4	4	1~5	0.55	
GLG-4.5	4.5	1~5	0.75	

Micro-nano Bubble Generator

1. Introduction

The independent-developed micro-nano bubble generator is consisted of micro-nano bubble generating device, diffusion device, shallow device, limit device, control device and etc. This system has been widely applied in aquaculture, landscape works, river improvement, water reuse, sewage treatment, gas-liquid mixing and other field. Combined with different air supply (such as air, oxygen, ozone, nitrogen, etc) and technique, it can realize high-efficient oxygen aeration, DAF separation, oxidative decoloration, nitrogen and phosphorus removal and other functions.

2. Application

- ※ Minimal equipment: teaching demonstration, small-scale tests and pilot experiment, integrated treatment unit
- ※ Large-scale equipment: quick purification and long-term operation of black-odor river, water purification process, reclaimed water reuse, standard purification, wastewater DAF treatment, new breeding and planting, etc.
- ※ Material: plexiglass, steel-made, plastic, FRP, steel concrete structure.
- ※ Control features: automatic local / wireless intelligent control.



3. Technical Data Sheet

Micro-nano bubble generator

Model	Micronano water capacity (m³/h)	Power (kW)	Dimension(mm)			Pipe diameter	
			L	W	H	Inlet	Outlet
GWNB2	2	1.65	1200	800	1578	DN40	DN32
GWNB4	4	2.25	1600	800	1678	DN50	DN40
GWNB6	6	2.95/3.3	1800	800	1728	DN50	DN40
GWNB10	10	6.25/6.6	2600	900	1728	DN65	DN50
GWNB20	20	9	2700	950	1848	DN80	DN80
GWNB30	30	13.2/13.25	3200	1000	2048	DN100	DN80
GWNB40	40	17.2/17.25	3300	1100	2248	DN125	DN100

Lamella Clarifier

1. Lamella Clarifier Introduction

According to the water flow direction, the sedimentation clarifier can be divided into horizontal, vertical, radial, inclined flow. Our lamella clarifier, also called inclined plate clarifier / inclined tube clarifier originates from Hazen Shallow tank theory.

Compared with traditional sedimentation clarifier, our lamella clarifier have optimize the design of inlet zone, settling zone, sludge collecting zone and outlet zone. This will reach up to 100% of efficiency.

The sewage will flow into the tank via inlet pipe. Then through the middle water corridor, the sewage will flow down and will be reflected by guide plate. Then through the two sides' water distribution outlet, the sewage will flow into the inclined plate.

2. Features

- ※ Super large settling capacity: improved inlet water corridor, uniform water distribution. At the top of the inclined plate, we have set up with via-holes, eliminating the short-circuit flow phenomena. This will utilize the inclined plate area to the best advantage and optimize the inclined plate length. Through the design of water collecting tank, adjustable weir plate and via-holes design, etc, the outlet rinsing water will be drained out uniformly and steadily.
- ※ Reduce the influence of flow state, reduce the possibility of scaling and depositing .
- ※ High sludge concentration of sludge sedimentation



3. Application

Industrial application

- ※ Industrial production wastewater.
- ※ Industrial chemistry--purification and concentration.
- ※ Paper pulp and paper-making industry.
- ※ Iron and steel industry--Phosphorus removal.
- ※ Metal hydroxides wastewater.
- ※ Purification of biological cleaning process.
- ※ Circulating water from potato and vegetables.
- ※ Dust wiper wastewater treatment from power plant.

Municipal wastewater

- ※ Pre-treatment
- ※ Backwash water treatment
- ※ Primary and secondary treatment
- ※ Tertiary treatment
- ※ Sludge thickening



5. Technical Data Sheet

Data / Model	XBC-5	XBC-10	XBC-20	XBC-30	XBC-40	XBC-50	XBC-60	XBC-80	XBC-100
Capacity(m³/h)	5	10	20	30	40	50	60	80	100
Motor power(kw)	0.55								
Scraper travelling speed (m/min)	2.26 2.1 2.3 2.5 2.55 2.64 2.68								
Inclined plate quantity (pc)	10	15	38	46	50	56	58	60	64
Inclined plate size (mm)	1060*1200	1350*1465	750*1600	900*1600	1050*1600	1110*1600	1150*1800	1200*1200	1300*2000
Equivalent settling area (m²)	6.36	14.83	22.8	33.12	42	49.7	60.03	72	83.2
Length (mm)	2400	3000	3750	4050	4340	4525	4725	4975	5175
Width (mm)	1340	1740	2220	2520	2820	3090	3190	3290	3490
Height (mm)	3050	3200	4650	4650	4700	4900	5100	5330	5330
The height from inlet pipe to ground (mm)	1300	1250	3350	3350	3350	3600	3600	3825	3825
The height from outlet pipe to ground (mm)	2550	2680	3400	3400	3450	3450	3450	3825	3825
Inlet pipe (mm)	DN80	DN100	DN125	DN150	DN150	DN150	DN150	DN200	DN200
Outlet pipe (mm)	DN80	DN100	DN125	DN150	DN150	DN150	DN150	DN200	DN200
Sludge discharge pipe (mm)	DN150				DN200				
Inspection manhole (mm)	/				DN600				

Note: the above data is based on inclined plate clarifier. If you need the inclined tube clarifier, pls contact with Gongyuan Group.

GJY Type Chemical Dosing Unit

1. Overview

GJY type chemical dosing system is mainly used for dissolve powdered agent like PAC, PAM, FeSO₄, and make up demanded liquid agent for use.

2. Components

GJY Type chemical dosing system adopts high-low tank type. It is mainly composed of dissolving tank, storage tank, agitator, manipulation platform and handrails. Note: chemical dosing pump is not include in the standard configuration. (We can choose suitable chemical dosing pump according to the clients' requirements.) Medicine dissolving tank is equipped with agitator. The chemical dosage is prepared based on various concentration. And then the prepared solution flows into the storage tank for reservation which is pumped by chemical dosing pump. In conclusion, this equipment has the advantages of simple structure, convenient operation and economic usefulness.

3. Main Technical Parameters

Model	Dissolving tank size (mm)	Effective volume of dissolving tank (L)	Storage tank size (mm)	Effective volume of storage tank (L)	Agitator (kw)
GJY500	Φ800×1250	500	Φ1150×1250	1000	0.75
GJY1000	Φ1150×1250	1000	Φ1400×1250	1500	0.75
GJY1500	Φ1400×1250	1500	Φ1600×1250	2000	0.75



GPT Type Automatic Dosing Unit

1. Introduction

GPT type automatic chemical dosing system is mainly used for preparing and adding PAM agent continuously. It is an important part of sludge dewatering system.

2. Components

GPT type automatic chemical dosing system use one set with three-tank type for continuous preparation. It mainly consists of hopper, dosing unit, infiltration device, medicine dissolving slot, maturing device, medicinetin, agitating system, liquid level control system and electric control cabinet. Vacuum conveyor, online dilution system and chemical dosing system are selected as accessories.



3. Main Technical Parameters

Model	GPT500	GPT1000	GPT1500	GPT3000	GPT5000	GPT8000
Max Capacity (l/h)	500	1000	1500	3000	5000	8000
Effective volume of tank	600	1400	2000	3600	6000	9500
PAM max dosage volume (kgDS/h)	1.5	3.0	4.0	8.0	16.0	32.0
Inlet flow (m³/h)	2.0	4.0	5.0	10.0	20.0	40.0
Inlet pressure (MPa)	0.2~0.5	0.2~0.5	0.2~0.5	0.2~0.5	0.2~0.5	0.2~0.5
Dry cast machine (kw)	0.18	0.18	0.18		0.18	0.18
Agitator (kw)	0.55	2*0.55	2*0.75	2*1.1	2*1.5	2*2.2
Power hopper volume (l)	50 (optional: 80,100,120)					

Note: 1) The above PAM maturing time is 60min;
 2) PAM dry powder dosing capacity should be tested under specified condition, different of power will have deviation;
 3) Normally for the tank and its agitator, it will use SS304;
 4) Pipe system material: U-PVC; 5) For the special requirement, pls ask with Gongyuan Group.

4. Optional Function

- ※ Dry power auxiliary electrical heating.
- ※ Vacuum feed system.
- ※ Dry powder vibration with prevention measures.
- ※ Dry power low level protection.
- ※ Inlet auxiliary warming-up system.
- ※ Secondary dilution system.
- ※ Frequency Conversion Dry Powder Regulating System.



ZG Sludge Scraper

1. Introduction

ZG sludge scraper mainly apply for the settling tank whose diameter is no more than 20m. It consists of working bridge, drive mechanism, drive shaft, scraping arm and scum board, dragline, underwater bearing, agitating impeller, steady flow cylinder and electric cabinet. According to the actual condition, we can add effluent weir plate, skimming mechanism, slag tap and sludge hopper, etc.



When the ZG sludge scraper working and running, its drive mechanism installed on the working bridge will drive up the transmission shaft for rotary. When the transmission shaft rotates, it will let the scraping arms on two sides rotate around the tank central axis. One set of scum board will rotate together with scraping arm, finally scraping out the settling sludge from the tank bottom to the sludge collecting tank. At the same time, if there is float scum, the skimmer will scrape it into sludge hopper.

2. Features

- ※ The working bridge will adopt truss type, concise, beautiful and light.
- ※ Easy for maintenance, low cost consumption.
- ※ Drive reducer: cycloidal reducer, compact structure.
- ※ For the electric components, we will use outdoor type, safe and reliable, stochastic control and remote control.
- ※ We can make the unit according to client's requirement. Wetted parts can be stainless steel.

3. Technical Data Sheet

Model	Tank diameter D (m)	Tank depth H (m)	Peripheral linear velocity (m/min)	Drive power (kw)	Weight (kg)
ZG3	3	3	1~2	0.37	2500
ZG4	4	3.5	1~2	0.37	3200
ZG5	5	4	1~2	0.37	3800
ZG6	6	4	1~2	0.37	4000
ZG8	8	4.5	1~2	0.55	5000
ZG10	10	4.5	1.5~2.5	0.55	6000
ZG12	12	5	1.5~2.5	0.55	6800
ZG14	14	5	2~3	0.75	7600
ZG16	16	5	2~3	0.75	8300
ZG18	18	5	2~3	0.75	9100

ZGA Sludge Scraper

1. Introduction

Central drive sludge scraper mainly suits for circular radial flow sedimentation tank of sewage treatment plant. Its major function is to scrape the settling sludge to the sludge tank in order to sludge back-flow and sludge thickening and dewatering. Depending upon circumstances, we can also set up a skimming mechanism on the water surface, collecting the float scum discharged by hopper.

ZGA sludge scraper consists of working bridge (normally, half-bridge), drive mechanism, rotary frame, scraping arm and scum board, dragline, hopper agitating impeller, steady flow cylinder, electric cabinet. According to the actual condition, we can add effluent weir plate, skimming mechanism, slag tap and sludge hopper, etc.

When the ZGA sludge scraper working and running, its drive mechanism installed on the working bridge will move the frame for rotary motion. Then the scraping arms on two sides and scum board will move in a clockwise direction, scraping out the settling sludge to the sludge collecting tank. At the same time, if there is float scum, the skimmer will scrape it into sludge hopper.

2. Features

- ✧ The working bridge will adopt truss type, concise, beautiful and light.
- ✧ Easy for maintenance, low cost consumption.
- ✧ Drive reducer: cycloidal reducer, compact structure.
- ✧ For the electric components, we will use outdoor type, safe and reliable, stochastic control and remote control.
- ✧ We can make the unit according to client's requirement. Wetted parts can be stainless steel.



3. Technical Data Sheet

Model	Tank diameter D (m)	Tank depth H (m)	Peripheral Linear Velocity (m/min)	Power (kw)
ZGA8	8	2.2	1.5~2.0	0.37
ZGA10	10	2.2	1.5~2.0	0.37
ZGA14	14	2.4	1.5~2.0	0.55
ZGA18	18	2.6	1.5~2.0	0.55
ZGA20	20	2.6	1.5~2.0	0.75
ZGA26	26	3.0	1.5~2.0	0.75
ZGA30	30	3.0	1.5~2.0	1.1
ZGA35	35	3.5	1.5~2.0	1.1
ZGA40	40	3.5	1.5~2.0	1.5

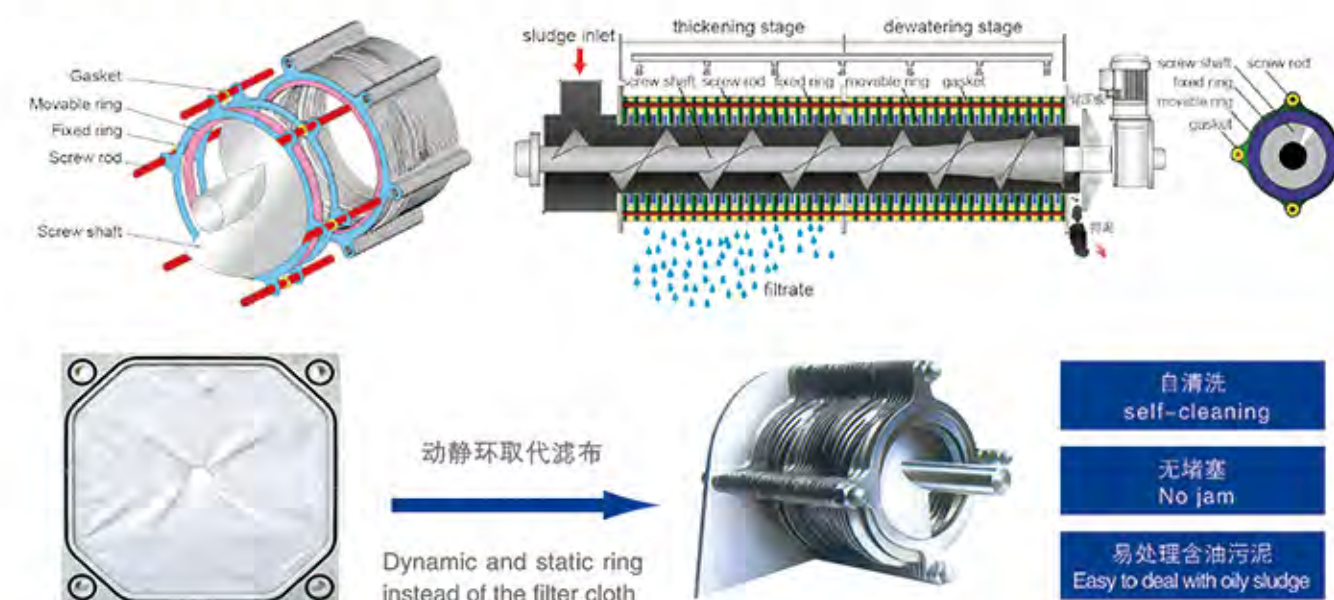
Screw Press

1. Introduction

During the water treatment process, it will produce different kinds of moistured sludge. The sludge dewatering system is mainly used for reducing water content, moisture rate and sludge volume. This will bring convenience for next sludge treating process. Generally, the sludge dewatering system can be divided into belt press, plate-and-frame filter press, screw press. Currently, belt press has been widely applied in sludge dewatering process. Due to its large water consumption, high requirements of handling problems, screw press is a new kind of sludge dewatering system with energy conservation, stable and high automation.

2. Working Principle

The main body of screw press consists of several fixed rings and movable rings. The screw shaft runs through these rings, finally forming a filter unit. The former stage is thickening stage and the end is dewatering stage. Due to its unique structure, it has replaced the traditional filter cloth and centrifugation.



3. Features

- ✧ Simple treatment process, high efficiency of dewatering and thickening, low investment cost.
- ✧ Dosing with PAM agent for easy dewatering.
- ✧ High degree of automation, wide application.
- ✧ Continuous operation, no secondary pollution.

4. Application

It is widely used in municipal sewage, food, beverage, slaughter and breeding, printing and dyeing, petrochemical industry, paper-making, leather, pharmaceutical and other industries.

5. Technical Data Sheet

Model	DS Sludge treating capacity (kg/h)		Sludge treating capacity (m³/h)			
	Low concentration	High concentration	10000mg/l	20000mg/l	25000mg/l	50000mg/l
DL131	5	10	0.5	0.2	0.4	0.2
DL132	10	20	1	1	0.8	0.4
DL133	15	30	1.5	1.5	1.2	0.6
DL251	15	30	1.5	1.5	1.2	0.6
DL252	30	60	3	3	2.4	1.2
DL253	45	90	4.5	4.5	3.6	1.8
DL301	30	60	3	3	2.4	1.2
DL302	60	120	6	6	4.8	2.4
DL303	90	180	9	9	7.2	3.6
DL304	120	240	12	12	9.6	4.8
DL351	50	100	5	5	4	2
DL352	100	200	10	10	8	4
DL353	150	300	15	15	12	6
DL354	200	400	20	20	16	8
DL401	80	160	8	8	6.4	3.2
DL402	160	320	16	16	12.8	6.4
DL403	240	480	24	24	19.2	9.6
DL404	320	640	32	32	25.6	12.8

Note: If the concentration less than 10000mg/l, we will suggest you for settling thickening; if the concentration more than 25000mg/l, we will suggest you for dilution.

Dimension And Weight

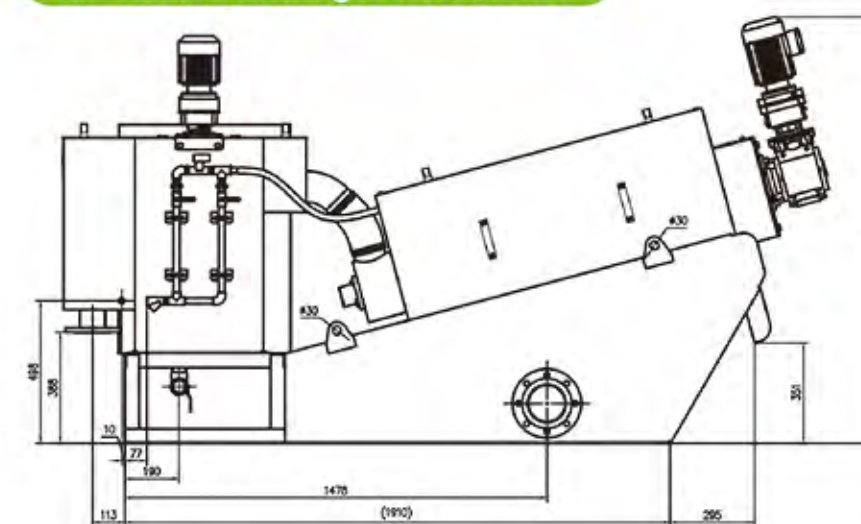
Model	Screw dimension (mm)	External dimension (mm)			Net weight (kg)	Operating weight (kg)
		L	W	H		
DL131	DN130×1180	1870	730	1170	250	395
DL132	DN130×1180	2000	960	1230	450	595
DL133	DN130×1180	2000	1190	1230	450	795
DL251	DN250×1760	2690	880	1600	500	805
DL252	DN250×1760	2810	1120	1600	800	1320
DL253	DN250×1760	2810	1360	1600	1100	1820
DL301	DN300×2220	3310	1000	1700	750	1275
DL302	DN300×2220	3500	1300	1700	1340	2225
DL303	DN300×2220	3700	1650	1700	1750	3030
DL304	DN300×2220	4000	2050	1750	2150	4150
DL351	DN350×2480	3610	1100	1850	1150	1915
DL352	DN350×2480	3820	1490	1850	1950	3205
DL353	DN350×2480	4120	1770	1850	2800	4830
DL354	DN350×2480	4320	2290	1850	3700	6515
DL401	DN400×3100	4550	1180	2250	2050	3425
DL402	DN400×3100	4870	1710	2250	3850	6645
DL403	DN400×3100	4790	2550	2250	5400	9710
DL404	DN400×3100	4840	3140	2250	7000	12960

Operating Condition

Model	Power (kw)			Washing pressure	Cleaning water volume (L/h)	Maintenance frequencies
	Screw press reducer	Agitator reducer	Total power			
DL131	0.18×1	0.18×1	0.36	>2kg/cm²	43	10min/day
DL132	0.18×2	0.18×1	0.54		86	
DL133	0.18×3	0.37×1	0.91		129	
DL251	0.55×1	0.37×1	0.92		58	
DL252	0.55×2	0.37×1	1.47		116	
DL253	0.55×3	0.55×1	2.2		174	
DL301	0.75×1	0.55×1	1.3		93	
DL302	0.75×2	0.55×1	2.05		186	
DL303	0.75×3	0.75×1	3		279	
DL304	0.75×4	0.75×1	3.75		372	
DL351	1.1×1	0.75×1	1.85		126	
DL352	1.1×2	0.75×1	2.95		252	
DL353	1.1×3	1.1×1	4.4		378	
DL354	1.1×4	1.5×1	5.9		504	
DL401	1.5×1	1.5×1	3		115	
DL402	1.5×2	1.5×1	4.5		230	
DL403	1.5×3	1.5×2	7.5		345	
DL404	1.5×4	1.5×2	9		460	



6. Outside Drawing For Reference



Rotary Drum Screen

1. Introduction

Rotary drum screw is a continuous and effective fine screen removing suspended solids. It is mainly applied in pre-treatment stage of sewage treatment plant or industrial screening. Under the specified screening condition, it can remove 30%-60% of suspended solids from screened sewage.

2. Working Principle

When the rotary drum screen runs, the sewage or other raw water will flow into the screen inlet tank via inlet pipe lifting by pump. Through eliminator(or water distribution pipe), the sewage will flow into the front of screw screen and pass through the screen surface and flow into the drum. Finally, the sewage will flow out at the bottom of the drum. The suspended solids will be left on the drum surface. With the vibration of the drum surface, the suspended solids will be transported from one side to another side and will be discharged by the discharging mechanism.

3. Features

- ✧ This unit will adopt wedge-type as filtering parts, easy for fluid passing through, non-blocking.
- ✧ Use stainless steel grid which apply for high temperature and high concentration of screening.
- ✧ This unit will use drum type, large filtering space. Thus for the same treating capacity, it has advantage of compact structure, small footprint, low energy consumption.
- ✧ This unit will use backwash nozzle to cleaning the debugging among drum screen. For the backwash start-up and stop-down, it can be controlled automatically or manual control.
- ✧ This unit can achieve continuous operation, automatic sludge discharge, high degree of automation.
- ✧ Completely closed design in case of secondary pollution.
- ✧ For the whole unit, it will be made up of stainless steel.



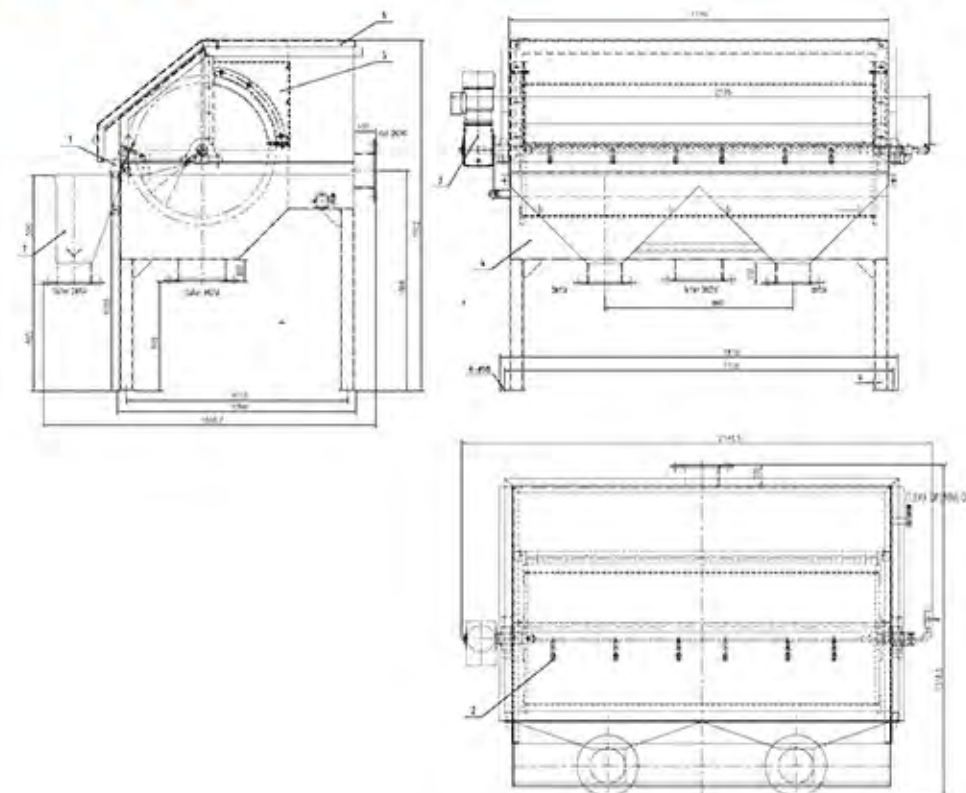
4. Technical Data Sheet

1. Flow sheet

space Sewage category model	RDS 06/400	RDS 06/700	RDS 06/1000	RDS 06/1300	RDS 06/1600	RDS 06/2000	RDS 08/2000	RDS 08/2500
0.5mm Paper	20	40	60	80	100	130	190	225
Slaughter house	15	30	45	60	75	95	130	160
0.75mm Seafood	17	35	50	70	90	110	140	170
Meat	20.5	40	60	80	100	130	190	240
Meat	25	50	75	100	125	150	220	240
1mm Vegetable	40	75	110	150	180	220	330	400
Municipal	80	150	230	300	350	400	600	600

2. Technical data sheet

parameter	RDS 06/400	RDS 06/700	RDS 06/1000	RDS 06/1300	RDS 06/1600	RDS 06/2000	RDS 08/200	RDS 08/2500
Model	06/400	06/700	06/1000	06/1300	06/1600	06/2000	08/200	08/2500
Drum size (mm)	Φ610×400	Φ610×700	Φ610×1000	Φ610×1300	Φ610×1600	Φ610×2000	Φ800×2000	Φ800×2500
Motor power (kw)	0.37	0.55			0.75			1.1
Drum speed (rpm)			4~20					2.5~15
L (mm)	990	1390	1690	1990	2290	2590	2670	3120
W (mm)			1520				1730	1750
H (mm)			1650				1930	1930
H1 mm (distance from outpipe to ground)			500				600	
Inlet (mm)	DN100	DN150	DN150	DN200	DN200	DN200	DN200	DN200
Outlet (mm)	DN125	DN200	DN200	DN250	DN250	DN250	DN250×2	DN300×2
Escape (mm)					DN50			
Sludge discharge (mm)	DN125		DN150				DN150×2	



Mechanical Bar Screen

1. Introduction

Mechanical bar screen is an advanced solid-liquid separation unit. It is mainly applied for municipal, district WWTP pre-treatment stage, municipal rainwater and sewage pumping station, waterworks and cooling water from power plant. This unit has been widely applied in textile, printing and dyeing, food, aquatic product, paper-making, slaughter, tannery wastewater treatment process. It is an ideal unit for screening.

2. Structure And Working Principle

This unit adopts rotary type, several plow-shaped rake will be installed on the shaft, forming rake chains. According to the water flow volume, the bar screen will have different spaces or gaps installed on the front of the pump station or water treatment system. When the drive mechanism move from bottom to top with rake chains. The debris will be taken out from the rake chains, while the liquid will flow through screen gap. When the unit rotates into the top, the rake chain will revert its running direction, moving from top to bottom. The matters will fall off from the rake chains. When the rake rotates into the bottom from the opposite side. Then it will re-start for continuous running.



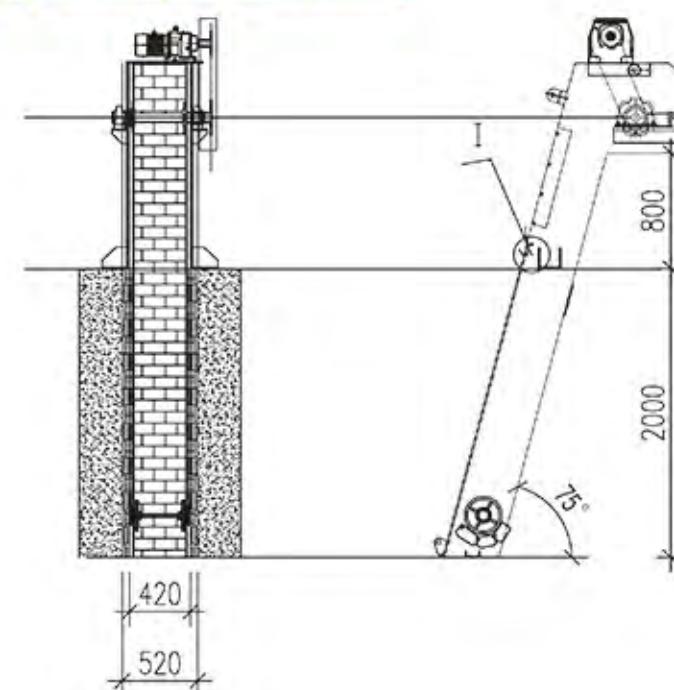
3. Features

- ※ High degree of automation, high efficiency of separation, low energy consumption, no noise, outstanding corrosion resistance. Continuous and stable running with no one watching. Its has set up with mechanic over-load safe protection. When it occurs fault, cut off the shear pin in case of overloading working and damaging the accessories.
- ※ We can adjust the running interval according to the clients' requirement reaching periodic operation. We can have control the unit automatically according to the liquid level difference before and after the screen. Also, the manual control can help us for maintenance. We can select the control mode according to the client's requirements.
- ※ Because of its reliable design, it has strong self-cleaning ability during working and operation with no blocking phenomena. Thus there is little maintenance job during daily life.

4. Technical Data Sheet

Model	Power	Water flow volume (m³/h)					Screen width (B1)	Channel Width (B)
	H (M)	2.5	5	7.5	10	15		
FH-300	0.37KW						300	400
FH-400	0.37KW						400	500
FH-500	0.55KW						500	600
FH-600	0.55KW						600	700
FH-700	0.55KW						700	800
FH-800	0.75KW						800	900
FH-900	0.75KW						900	1000
FH-1000	0.75KW						1000	1100
FH-1100	1.1KW						1100	1200
FH-1200	1.1KW						1200	1300
FH-1300	1.5KW						1300	1400

5. Outside Drawing Drawing For Reference



Static Screen

1. Introduction

The main body of the static screen is made up of wedge-type stainless steel or screen face. The sewage will be distributed on the screen face via overflow weir. Because of the smooth screen face with small gap, the static screen can drain out water easily without blocking. Under the effect of hydraulic, the solid matters will be pushed into the hopper (optional parts) for solid-liquid separation.



2. Features

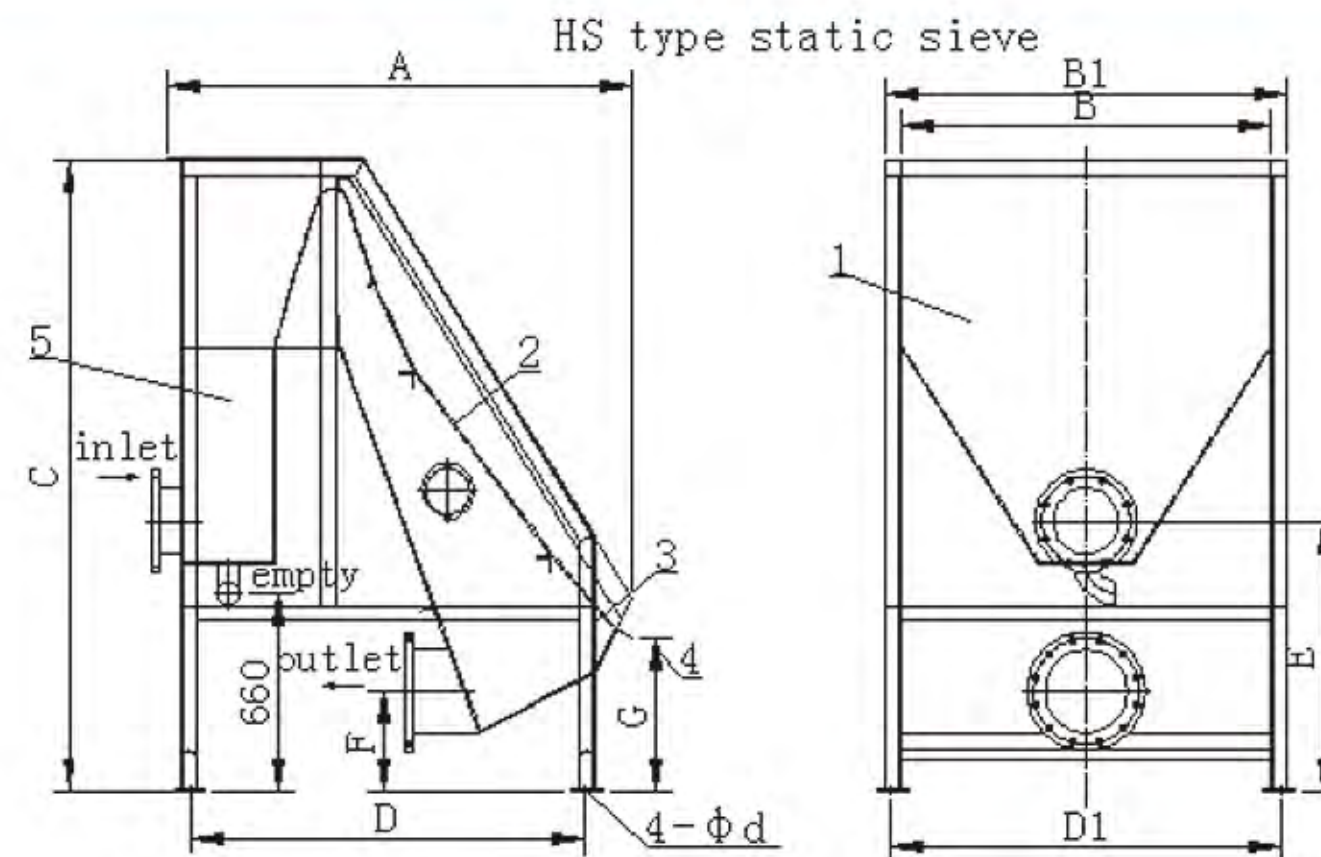
- ※ Make use of water flow gravity action, no energy consumption.
- ※ Large treating capacity of one unit.
- ※ No blocking, easy for maintenance.
- ※ The whole unit is made up of stainless steel, high mechanic strength.

3. Application

According to different kinds of sewage, static screen can remove suspended solids, float scum, etc. As the primary treating process, static screen can replace of sedimentation tank reducing large numbers of job, strengthening the biological treating process and saving running cost. Static screen can also be used for solid-liquid separation and thickening.

Typical application industry:

- ※ Paper-making industry--recycling of fiber, removing solids.
- ※ Tannery wastewater-- removing of feather, oil and grease.
- ※ Slaughterhouse wastewater-- removing of bag, fur, grease and feces.
- ※ Municipal wastewater -- removing fur, debris.
- ※ Alcohol plant, starch factory --removal of solid substances such as vegetable fibre, hulls, groceries,etc.



1. Frame 2. Screen face 3. Outlet chamber 4. Sludge discharge 5. Water storage tank

4. Technical Data Sheet

Model	Capacity m ³ /h			
	Screen gap (mm)			
	0.25	0.5	1.0	1.5
HS60	9	22	40	60
HS90	12	35	60	80
HS120	18	45	80	100
HS150	22	55	95	130
HS200	28	72	125	160

Model	A	B	B1	C	D	D1	E	F	G	d	Inlet pipe	Outlet pipe	Escape pipe	Weight (kg)	Operating weight (kg)
HS60	1350	600	700	1800	1100	670	900	300	550	14	DN100	DN150	DN65	280	980
HS90	1350	900	1000	1800	1100	970	900	300	550	14	DN150	DN200	DN65	350	1300
HS120	1550	1200	1300	2100	1300	1270	900	350	550	18	DN200	DN250	DN65	460	1950
HS150	1550	1500	1600	2100	1300	1570	900	350	550	18	DN250	DN300	DN65	530	2350
HS200	1550	2000	2100	2100	1300	2070	900	350	550	18	DN250	DN350	DN65	690	3170