

山东富乐伟环保设备有限公司

Shandong fulewei environmental protection equipment Co., Ltd

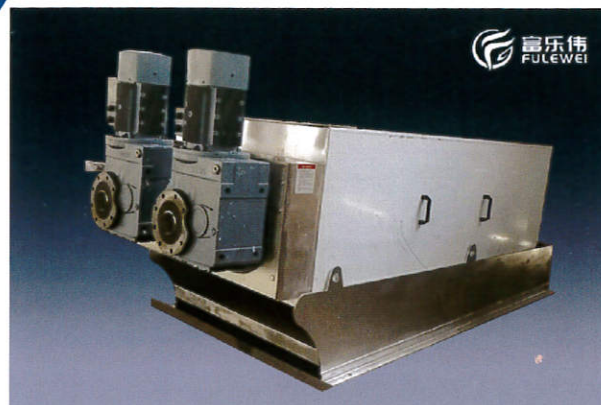
为全球提供先进的固液分离、深度脱水及干化智能装备

Provide advanced solid-liquid separation, deep dehydration and drying intelligent equipment for the world



富乐伟
FULEWEI

叠螺式污泥脱水机 Screw type sludge dehydrator



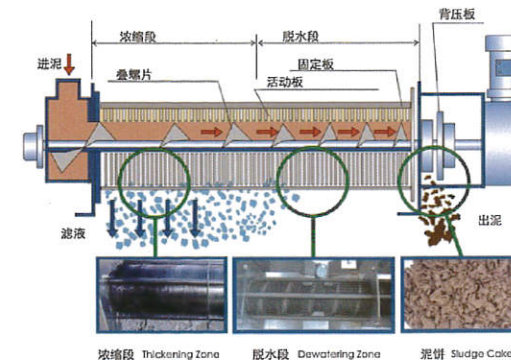
工作原理 working principle

叠螺污泥脱水机的工作原理是由固定环和游动环的相互层叠，螺旋轴贯穿其中形成的过滤装置推动。前端为浓缩部后端为脱水部。固定环和游动环之间形成的滤缝以及螺旋轴的螺距从浓缩部到脱水部逐渐变小。螺旋轴的旋转在推动污泥从浓缩部到脱水部的同时，也不断带动游动环清扫滤缝，防止堵塞。污泥在浓缩不经过重力浓缩后，被运输到脱水部，在前进的过程中随着滤缝和螺距的逐渐变小，以及背压板的作用下，产生极大的内压，容积不断缩小，达到充分脱水目的。

The main body of the dehydrator is a filter device composed of a fixed ring and a floating ring, in which the spiral axis runs through. The front section is the concentration section and the back section is the dehydration section. The filter gap formed between the fixed ring and the traveling ring and the pitch of the spiral axis gradually decrease from the concentration part to the dehydration part. The rotation of the screw shaft not only pushes the sludge to be transported from the concentration section to the dehydration section, but also continuously drives the traveling ring to clean the filter joint to prevent clogging. After gravity concentration in the concentration section, sludge is pushed to the dehydration section under the drive of variable pitch spiral axis. In the process of advance, with the gradual decrease of filter gap and pitch, as well as the back pressure.

叠螺式污泥脱水机 Screw type sludge dehydrator

组成部分 component



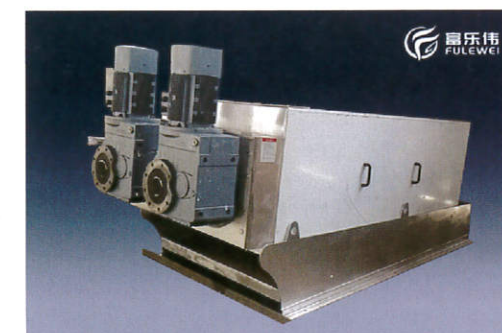
- 1、叠螺过滤（脱水）主体；
- 2、驱动减速机、电机；
- 3、螺旋轴；
- 4、污泥搅拌混合槽；
- 5、电控系统；
- 6、辅助配置，如冲洗装置、底架、进泥及回流装置等。

1. Main body of stacked screw filtration (dehydration);
2. Drive reducer and motor;
3. Screw shaft;
4. Sludge mixing tank;
5. Electric control system;
6. Auxiliary configuration, such as flushing device, underframe, mud inlet and return device.

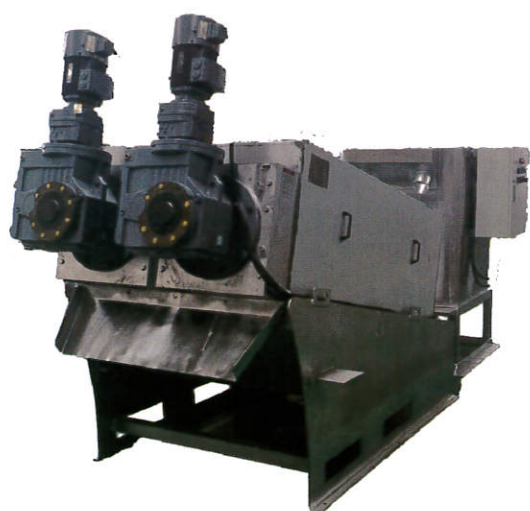
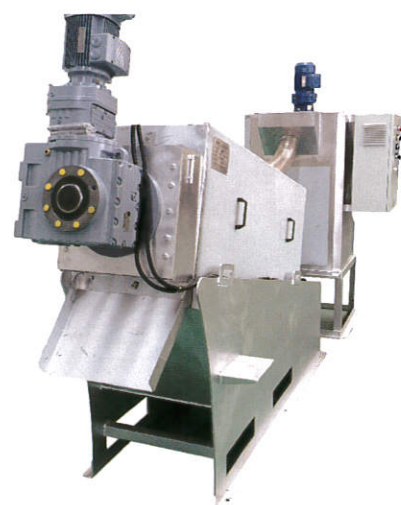
产品优势 Product advantages

- 1、设备自动化程度高，节省人工；
- 2、运行时不易堵塞，运行维护成本低；
- 3、可连续自动运行，从污泥提升、加药、脱水、输送实现全自动运行；
- 4、可以实现无人值守，适用于高危、防爆作业环境；
- 5、设备非常紧凑，占地面积小，基建要求低，节约基建及配套投资；
- 6、设备故障率低，使用寿命长；
- 7、处理量大，可多台并列使用；
- 8、超低耗能，处理费用低，综合处理费用大大低于其他污泥脱水设备。

1. High degree of automation and labor saving;
2. It is not easy to block during operation and the cost of operation and maintenance is low;
3. It can operate continuously and automatically, and realize full-automatic operation from sludge lifting, dosing, dehydration and transportation;
4. It can realize unattended operation, which is suitable for high-risk and explosion-proof operation environment;
5. The equipment is very compact, covering a small area, requiring low capital construction, saving capital construction and supporting investment;
6. The equipment has low failure rate and long service life;
7. It has large processing capacity, and can be used in parallel with multiple sets;
8. Ultra low energy consumption, low treatment cost, comprehensive treatment cost greatly lower than other sludge dewatering equipment.



叠螺式污泥脱水机 Screw type sludge dehydrator



选择叠螺机，与污泥的绝干泥量以及含固率有关，以及生产厂家机器设备的日产泥量或每钟头产泥量、脱干后的泥饼含水量，依照这种统计数据来挑选适合的型号规格。

The selection of screw stacker is related to the absolute dry sludge volume and solid content of sludge, the daily sludge production or sludge production per hour of the manufacturer's machinery and equipment, and the moisture content of sludge cake after dewatering. The appropriate model and specification are selected according to the statistical data.

规格型号 Specification and model

设备型号 Equipment model	绝干泥量 Absolute dry mud volume (DS)	脱出滤饼量 (小时) Amount of cake removed (hour)	10000mg / L 以下 Below 10000mg / L	10000~30000mg/L	30000~40000mg/L	设备尺寸 Equipment size			功率 power	重量 weight
			含水率 99% 以下 Water content below 99%	含水率 99-97% Moisture content 99-97%	含水率 97-96% Moisture content 97-96%					
			含固率 1% 以下 Solid content less than 1%	含固率 1-3% Solid content 1-3%	含固率 3-4% Solid content 3-4%					
						长 long	宽 wide	高 high		
FLWDL-101	8~10 kg/h	0.04 ~0.05 T	1~1.2 m³/h	0.5~1.2 m³/h	0.3~0.4 m³/h	1.81m	0.58 m	0.96 m	0.35 KW	0.2 T
FLWDL-102	16~20kg/h	0.08 ~0.1 T	2~2.4 m³/h	1~2.4m³/h	0.6~0.8 m³/h	1.82m	0.91 m	0.96 m	0.55 KW	0.4 T
FLWDL-201	18~25 kg/h	0.09 ~0.13 T	2~4 m³/h	1.5~2 m³/h	0.8~1.5 m³/h	2.8 m	0.76 m	1.88 m	0.55 KW	0.35 T
FLWDL-202	36~50kg/h	0.18 ~0.25 T	4 ~8 m³/h	3~4 m³/h	1.6~3 m³/h	2.85m	1.08 m	1.88 m	1.35 KW	0.7 T
FLWDL-301	40~60 kg/h	0.2 ~0.3 T	8~12m³/h	3~10 m³/h	2~4 m³/h	3.85m	0.69 m	1.88 m	1.65 KW	0.5 T
FLWDL-302	80~120 kg/h	0.4 ~0.6 T	16~24m³/h	6~20 m³/h	4~8 m³/h	3.95m	1.22 m	1.88 m	2.95 KW	1 T
FLWDL-303	120~180kg/h	0.6 ~0.9 T	24~36m³/h	9~30 m³/h	6~12 m³/h	4.05m	1.75 m	1.88 m	4.05 KW	1.5 T
FLWDL-304	160~220 kg/h	0.8 ~1.1 T	32~48m³/h	12~40 m³/h	8~16 m³/h	4.16m	2.26 m	1.88 m	5.15 KW	2 T
FLWDL-351	80~100 kg/h	0.4 ~0.5 T	10~16m³/h	5~10 m³/h	4~6 m³/h	4.16m	0.75 m	1.95 m	2.25 KW	0.8 T
FLWDL-352	160~220 kg/h	0.8 ~1.1 T	20~32m³/h	10~20 m³/h	8~12 m³/h	4.3 m	1.32 m	1.95 m	3.75 KW	1.6 T
FLWDL-353	240~300 kg/h	1.2 ~1.5 T	30~48m³/h	15~30 m³/h	12~18 m³/h	4.4 m	1.89 m	1.95 m	5.25 KW	2.4 T
FLWDL-354	300~360 kg/h	1.5 ~1.8 T	40~64m³/h	20~40 m³/h	16~24 m³/h	4.3 m	2.45 m	1.95 m	7.5 KW	2.4 T
FLWDL-401	130~160 kg/h	0.65 ~0.8 T	16~20 m³/h	7~18 m³/h	5~8 m³/h	4.5 m	0.87 m	2.2 m	2.95 KW	1.2 T
FLWDL-402	260~320 kg/h	1.3 ~1.6T	32~40 m³/h	14~36 m³/h	10~16 m³/h	4.6 m	1.5 m	2.2 m	5.15 KW	2.4 T
FLWDL-403	390~480 kg/h	1.95 ~2.4 T	48~60 m³/h	21~48 m³/h	15~24 m³/h	4.7 m	2.09 m	2.2 m	7.35 KW	3.6 T
FLWDL-404	520~640 kg/h	2.6 ~3.2 T	64~80 m³/h	28~72 m³/h	20~32 m³/h	4.6 m	2.69 m	2.2 m	10.3 KW	3.6 T

适用行业 Applicable industries



电镀污泥处理
Electroplating sludge treatment



禽畜养殖行业
Animal husbandry industry



石油化工行业
Petrochemical industry



纺织印染行业
Textile printing and dyeing industry



食品行业
Food industry



市政污水处理
Municipal sewage treatment



造纸行业
Paper industry



制药行业
Pharmaceutical industry

工程案例 Project cases

对客户高度负责，深受广大使用客户的欢迎，产品畅销全国，并远销到德国、新加坡、非洲等地。

We are highly responsible for our customers and are welcomed by our customers. Our products sell well all over the country and are exported to Germany, Singapore, Africa, Indonesia, Thailand, America etc.

现为中石油长城钻探钻井液公司撬装式一体化加药机、叠螺式污泥脱水机定点供货商、中国科学院地理科学与资源研究所国家级土壤深度改良项目叠螺机供货商、聊城中通客车特种车辆分厂固液分离车合作方。

At present, he is the designated supplier of skid mounted integrated dosing machine and stacked screw type sludge dehydrator of CNPC Great Wall Drilling Fluid company, the supplier of stacked screw machine of national soil depth improvement project of Institute of Geosciences and resources of Chinese Academy of Sciences, and the partner of solid-liquid separation vehicle of Liaocheng Zhongtong special vehicle branch.

无磨损叠螺机 No wear stacker

山东富乐伟自主研发的叠螺式无磨损强挤压污泥脱水机具备以下7个方面的优势：

- 1、实现了叠螺机的游动环非接触式高精度运行，变被动游动为主动游动，设备使用寿命为普通叠螺机的3~5倍；
- 2、强挤压装置，可以将脱水后污泥含水率在原来基础之上，降低10%~15%（实现强挤压必须依靠无磨损技术），大大降低污泥干化成本；
- 3、高精度过滤间隙，在污泥强挤压降低含水率过程中，最大限度的减少过滤本体漏泥率；
- 4、宽范围的主驱动变频调速，有效可控处理量及泥饼含水率；配置高标准减速机，主驱配置浙江瑞德森减速机，主动叠环驱动及搅拌驱动配置日本日精减速机；
- 5、滤液二次处理装置，将脱水时的滤液及冲洗液进行多级沉降、收集及定时定量回流至混合单元，使污泥捕获率高于95%；
- 6、智能化控制系统，电气元件为高质量的施耐德电气，PLC采用西门子，动态显示设备运行，设置负载过重自动报警功能，易于操作的界面，可远程控制；

The stacked screw type strong extrusion sludge dehydrator independently developed by Shandong fullway has the following advantages:

1. The non-contact high-precision operation of the traveling ring of the screw stacker is realized, the passive traveling is changed into the active traveling, and the service life of the equipment is 3-5 times of that of the common screw stacker;
2. The water content of dewatered sludge can be reduced by 10%~15% in the strong extrusion device (the realization of strong extrusion must rely on wear free technology), and the cost of sludge drying can be greatly reduced;
3. High precision filtration gap, in the process of sludge extrusion to reduce water content, to minimize the leakage rate of the filtration body;
4. Wide range of main drive variable frequency speed regulation, effective control of handling capacity and moisture content of mud cake; equipped with high standard reducer, main drive equipped with Zhejiang redson reducer, active stacked ring drive and agitation drive equipped with Japanese fine reducer;
5. In the secondary treatment device of filtrate, the filtrate and flushing liquid during dehydration are settled, collected and returned to the mixing unit regularly and quantitatively, so that the sludge capture rate is higher than 95%;
6. Intelligent control system, electrical components for high-quality Schneider Electric, PLC using Siemens, dynamic display equipment operation, set overload automatic alarm function, easy to operate interface, remote control.

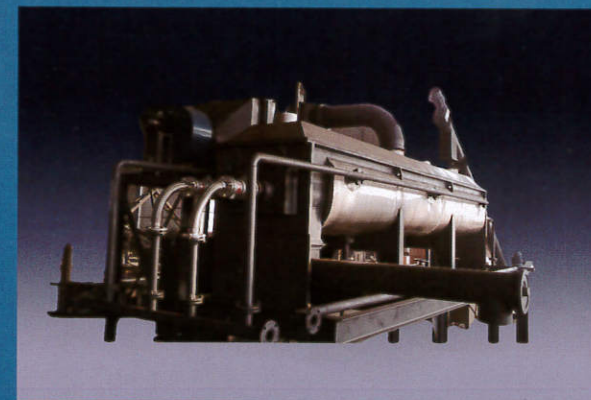
污泥干化 Sludge drying



链板式污泥烘干机属喷射气流烘干机类型，热风以孔束流由上下喷向输送带上的物料，由于喷射风速高达2m/s以上，故对流传热的膜极薄，传热系数大，干燥速度快。该设备用于不透气类物料时，上面喷射气流仍返回上面，下面喷出的气流仍返回下面，再参与循环。对透气性物料气流束具有强穿透性及在物料内部的扩散性。使用热源可以是蒸汽、电、热风炉及燃油烟道气等。

The chain plate sludge dryer belongs to the type of jet air dryer. The hot air is sprayed from top to bottom to the materials on the conveyor belt by the hole beam. Because the jet air speed is over 2m / s, the film of convective heat transfer is very thin, the heat transfer coefficient is large, and the drying speed is fast. When the equipment is used in airtight materials, the upper jet air still returns to the upper part, the lower jet air still returns to the lower part, and then participates in the circulation. It has strong penetrability and diffusivity in the interior of the family. The heat source can be steam, electricity, hot blast furnace, fuel gas flue, etc.

污泥干化 Sludge drying

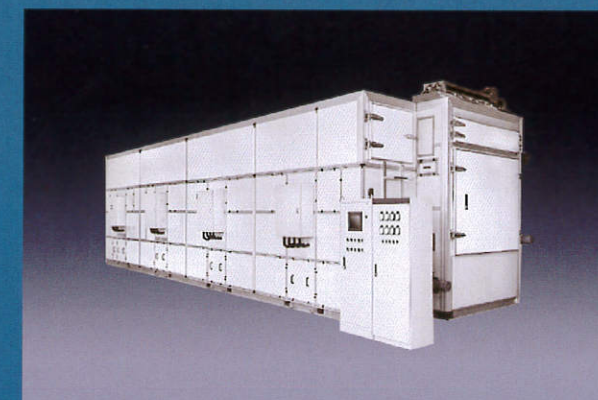


富乐伟环保设备有限公司研发制造的空心桨叶污泥烘干机，能把已脱水后(如：压滤后)高含水率的物料进行烘干，烘干后物料的含水率可以有效控制到10%-40%，经烘干处理后，实现污泥处理的减量化。

广泛应用于印染污泥，纺织污泥，焊材污泥，生物污泥，石化污泥，电镀污泥，造纸污泥，及其他废渣的高效烘干。系统设备全部密封运行，系统设备全部密封运行，无粉尘及气味外泄，节能环保，降低企业固废物处置成本，节省成本。

The hollow paddle sludge dryer developed and manufactured by Shandong fulewei environmental protection equipment Co., Ltd. can dry materials with high moisture content after dehydration (such as pressure filtration). The moisture content of materials after drying can be effectively controlled to 10% - 40%. After drying, the sludge treatment can be reduced.

Widely used in printing and dyeing sludge, textile sludge, welding material sludge, biological sludge, petrochemical sludge, electroplating sludge, paper-making sludge, and other waste efficient drying. The system equipment is all sealed operation, no dust and odor leakage, energy saving and environmental protection, reduce the cost of solid and foreign matters disposal, and save the cost.



山东富乐伟的污泥低温干化机，在污泥干化减量领域代表着最新的技术应用趋势，彻底解决了传统技术路线干化过程中(能耗高、效率低、含水率高、臭气排放、高温扬尘等)遗留的技术缺陷，实现无热损密闭式工作，无臭气排放，低温安全无扬尘，干泥含水率低于10%以下，适应于更苛刻要求的污泥无害化减量处置。

The sludge low-temperature drying machine of fulewei in Shandong Province represents the latest technology application trend in the field of sludge drying and reduction. It completely solves the technical defects left over in the drying process of the traditional technology route (high energy consumption, low efficiency, high moisture content, odor emission, high-temperature dust, etc.), and realizes closed work without heat loss, odor emission, low-temperature safety, and low moisture content of dry sludge Less than 10%, it is suitable for the more demanding sludge harmless reduction treatment.

河道清淤打桩盾构泥浆分离 River dredging



我公司根据与深圳城道通环保、程力专汽、中通新能源汽车等多家公司合作多台移动式固液分离车的经验，以及为济南小清河清淤2018年提供整套污泥脱水装备的基础之上，优化工艺，进行本方案的设计。

Based on the experience of cooperating with several mobile solid-liquid separation vehicles with Shenzhen chengdaotong environmental protection Co., Ltd., chengli special Automobile Co., Ltd., Zhongtong New Energy Automobile Co., Ltd. and providing a complete set of sludge dewatering equipment for dredging of Xiaoqinghe River in Jinan in 2018, our company optimizes the process and designs this plan.



根据河道清淤现场实际情况，配置了转子泵污泥提升模块、污泥粗过滤模块、污泥缓冲储蓄模块、污泥二次精细过滤模块、集泥均置模块、加药絮凝模块、药剂及污泥输送模块、固液分离模块、自动化控制模块等，从根本上解决了从河道里提取污泥、水、杂质混合难以提升、提升后杂质太多难以进入固液分离单元过滤、污泥不均匀难以絮凝分离等问题，是目前设计较为科学合作的移动式河道清淤集成装备。

According to the actual situation of the river dredging site, the rotor pump sludge lifting module, sludge coarse filtration module, sludge buffer storage module, sludge secondary fine filtration module, sludge collection and equalization module, dosing and flocculation module, agent and sludge transportation module, solid-liquid separation module, automatic control module, etc. are configured to fundamentally solve the problem of mixing sludge, water and impurities extracted from the river. It is difficult to lift, too many impurities are difficult to enter the solid-liquid separation unit for filtration after lifting, and sludge is uneven and difficult to flocculate and separate. It is a mobile integrated dredging equipment designed for scientific cooperation at present.

固液分离车 Solid liquid separator



山东富乐伟环保成功研发、制造出移动式固液分离车，这种车辆具备以下优势：

- 1、整体设计较非常紧凑，占用空间小。
设备可装在4.5米、6.8米、7.8米、13米等各型号的运输车辆上，符合普通车辆运输尺寸标准，设备高度集约化，方便移动。
- 2、处理量大，节约处理成本。
每小时10~50立方抽取污泥处理量，大大提高了工作效率，节约大量人力及普通吸污车运输的成本。

Shandong fulewei environmental protection Co., Ltd. has successfully developed and manufactured a mobile solid-liquid separation vehicle, which has the following advantages:

1. The overall design is very compact and takes up little space.
The equipment can be installed on 4.5m, 6.8m, 7.8m, 13m and other types of transport vehicles, meeting the transport size standard of ordinary vehicles, with highly intensive equipment and convenient movement.
2. The treatment capacity is large and the treatment cost is saved.
The sludge treatment capacity of 10-50 cubic meters per hour greatly improves the working efficiency and saves a lot of manpower and the cost of transportation by ordinary suction trucks.

配套设备 Supporting equipment



全自动加药机
Automatic dosing machine

全自动加药机是水与药剂进行混合溶解的容器，采用优质SUS304不锈钢焊接而成，整个罐体分三部分，从清水进水口开始系一腔室，药剂干粉投放到该腔室中进行搅拌，本腔室液位满时自然溢流到第二腔室进行搅拌；然后第二腔室溢流到第三腔室，最后，在第三腔室由加药泵把药剂抽取输送到叠螺式污泥脱水机混合槽的加药管道。该部件包括罐体、清水进水口、药剂抽取口、各腔室观察口（一共3个带把手的盖）、进水管集成、进水转子流量计、排空管道及阀门、电极式液位计、整机底架组成。

The full-automatic dosing machine is a vessel for mixing and dissolving water and chemicals. It is made of high-quality SUS304 stainless steel by welding. The whole tank is divided into three parts. From the fresh water inlet, it is a chamber. The dry powder of chemicals is put into the chamber for mixing. When the liquid level of the chamber is full, it will naturally overflow to the second chamber for mixing. Then the second chamber overflows to the third chamber. Finally, it is in the third chamber The agent is pumped by the dosing pump to the dosing pipeline of the mixing tank of the screw type sludge dehydrator. The components include tank body, clean water inlet, agent extraction port, observation port of each chamber (3 covers with handle in total), water inlet pipe integration, water inlet rotameter, emptying pipe and valve, electrode type liquid level meter, and the whole chassis.

污泥的深度脱水，在污泥脱水前通过向污泥中添加不同的调理剂（溶液态或固体粉料）的方式对污泥进行调理，以改善污泥的脱水性能，并配合传统或新型的脱水设备对污泥进行深度脱水，这样的调理——深度脱水工艺就对污泥调理的加药设备及调理过程中操作条件的控制提出了相对严格的要求，我公司研发出的能控制调理污泥浓度的新型污泥调理装置，为脱水前的污泥进行浓缩或改性处理，可提高脱水效率，避免药剂浪费。

Before the sludge dewatering, the sludge is conditioned by adding different conditioners (solution or solid powder) to the sludge to improve the dewatering performance of the sludge, and the sludge is deeply dehydrated with the traditional or new dewatering equipment. Such conditioning - the deep dewatering process is the dosing equipment for sludge conditioning and the operating conditions in the conditioning process Our company has developed a new type of sludge conditioning device which can control the concentration of conditioned sludge. It can concentrate or modify the sludge before dehydration, which can improve the efficiency of dehydration and avoid the waste of chemicals.



污泥沉降调理罐
Sludge settling conditioning tank



自动加药机选型表 Selection table of automatic dosing machine

机 型 model	制备量 Preparation quantity	设备尺寸 (不含泵) Equipment size (excluding pump)			配制浓度 Preparation concentration	进水量 (流量需可调) Water inflow (The flow needs to be adjustable)	投粉量 Powder dosage	熟化时间 Ripening time	进/出管径 Inlet / outlet pipe diameter	功率 (不含泵) Power (excluding pump)	对应叠螺机型号 Corresponding screw stacking machine model
	L/hr	长 long(mm)	宽 Wide(mm)	高 High(mm)	通常 usually	L/h	Kg/h	min	(DN)	(KW)	
FLWJY-500	500	1830	1070	1750	1~3 ‰	1000	0.6-1	20-30	25/25	1.25	101/102/201/202/301
FLWJY-1000	1000	1830	1070	1750		2000	1-2		25/25	1.8	202/302/351/401
FLWJY-1500	1500	2030	1070	1750		3000	1.5-3		25/25	2.4	302/303/351//352
FLWJY-2000	2000	2030	1330	1750		4000	2-4		25/25	2.4	303/352/402
FLWJY-2500	2500	2230	1330	1970		4000	2-5		25/25	2.4	304/353/354/403
FLWJY-3000	3000	2470	1330	1970	1~3 ‰	5000	3-6	20-30	25/25	2.4	354/404
FLWJY-4000	4000	2470	1610	2120		6000	4-8		25/50	3.45	多台叠螺并列制备投加 Preparation and dosing of multiple spirochetes in parallel
FLWJY-5000	5000	3030	1610	2400		8000	5-10		25/50	3.45	多台叠螺并列制备投加 Preparation and dosing of multiple spirochetes in parallel

注：1、型号再大的，需要根据客户制备要求及现场情况，进行单独设计。加药机罐体尺寸，也可以根据现场情况定制。

2、因药剂投加泵隔膜计量泵、离心泵、螺杆泵等不同，故功率一项不包含加药机的功率。

Note: 1. If the model is larger, it needs to be designed separately according to the customer's preparation requirements and site conditions. The tank size of the dosing machine can also be customized according to the site conditions.

2. Due to the difference of dosing pump, diaphragm metering pump, centrifugal pump and screw pump, the power item does not include the power of dosing machine.

相对全自动加药机，简易加药机无自动干粉投加器，搅拌级数为2级，罐体材料通常为碳钢防腐（也可PE、玻璃钢及不锈钢304），技术参数不再一一列举。

Compared with the full-automatic dosing machine, the simple dosing machine has no automatic dry powder feeder, and the mixing stage is 2. The tank body is usually made of carbon steel anticorrosion (also can be PE, FRP and stainless steel 304). The technical parameters are not listed one by one.

公司理念

Company philosophy

富于创新，乐于智造，伟功环保。

Rich in innovation, willing to build intelligently, great contribution to environmental protection

山东富乐伟环保设备有限公司

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