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Techase® Multi-plate Screw Press 叠螺式污泥脱水机



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扫一扫 知同臣

叠螺式污泥脱水机 Multi-plate Screw Press

设备概况 Introduction

上海同臣环保股份有限公司生产的叠螺式污泥脱水机在脱水机理上遵循力水同向、薄层脱水、适当施压及延长脱水路径等原则，解决了前几代污泥脱水机设备易堵塞、无法处理低浓度污泥及含油污泥、能耗高、操作复杂等技术难题，实现了高效节能的脱水目标。

The Multi-plate Screw Press developed by Techase utilizes the dewatering principles of force-water homo-direction, thin-layer dewatering, proper pressure and extension of the sludge dewatering path. The new equipment, more advanced than the traditional dewatering equipment which are easily blocked, unsuitable for low-concentrated sludge and oily sludge, of high consumption and difficult to operate, well eliminate these problems and are of higher efficiency and power saving.

叠螺式污泥脱水机集全自动控制柜、絮凝调质槽、污泥浓缩脱水本体及集液槽于一体，可在全自动运行的条件下，实现高效絮凝，并连续完成污泥浓缩和压榨脱水工作，最终将收集的滤液回流或排放。

The multi-plate screw press, which is controlled by the electric control cabinet, allows automatic continuous operation of sludge flocculation, thickening, dewatering and the filtrate discharging.



作为叠螺式污泥脱水机行业第一品牌和行业发展的引领者，同臣环保在行业内技术研发能力最强，用户案例最多，生产能力最大，产品线最丰富，是众多专业用户的选择。

Techase, as the industry leader and first brand of Multi-plate Screw Press, have the strongest R & D capability, most application cases, largest production capacity, richest product lines and highest recognition from professional users.

同臣环保联合同济大学，建立了ANSYS螺旋轴压榨有限元分析理论模型，从理论上根本解决了设备的研发、设计、创新工作，并在此基础上推出了：

Under the cooperation with Tongji University, Techase built the finite element model according to ANSYS screw shaft pressing theory, which basically solved the problems of the product design, technical innovation and equipment operation. On the basis of the advanced model, Techase successfully developed following significant technology innovations:

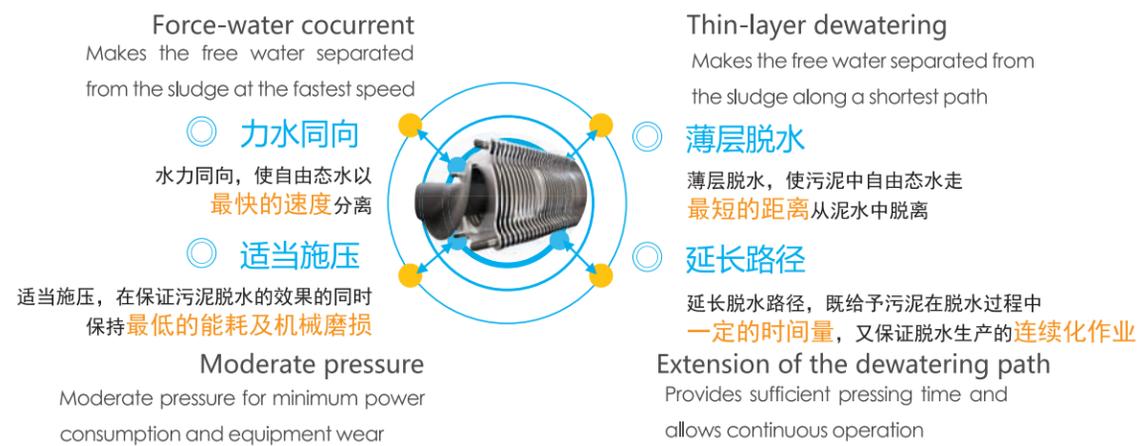


● 行业专用螺旋轴体 The special shafts for different industry

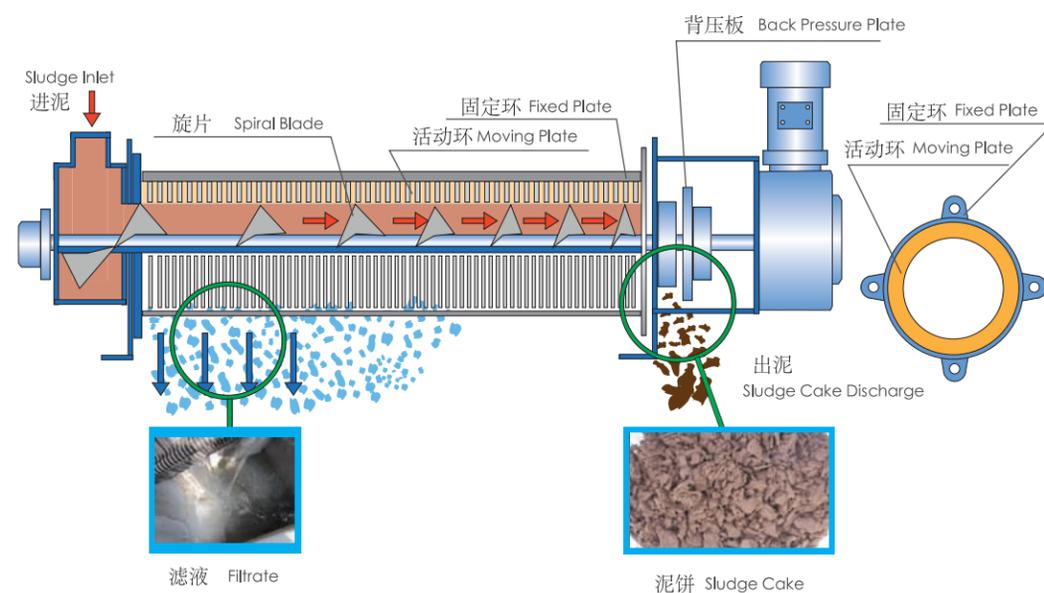
- ④ 400系列大型螺旋轴（行业首家）
400 Series Screw Shaft (Industry First)
- ④ 无磨损型叠螺式污泥脱水机（行业首家）
Wear-free type of Multi-plate Screw Press (Industry First)
- ④ 污泥浓缩机专用螺旋轴（行业唯一）
Special screw shaft for Sludge Thickener (Industry Only)
- ④ 无机物料螺旋轴和专用机（行业唯一）
Special screw shaft and machine for inorganic material (Industry Only)
- ④ 石化、果蔬加工、造纸等行业螺旋轴和专用机（行业唯一）
Special screw shaft and machine for petrochemical, pectin, paper industry (Industry Only)

工作原理 Working Principle

设备运行时，污泥从进料口进入滤筒后受到螺旋轴旋片的推送而向卸料口移动，由于螺旋轴旋片之间的螺距逐渐缩小，因此污泥所受的压力也随之不断增大，并在压差作用下开始脱水，水份从固定环与活动环的过滤间隙流出，同时设备依靠固定环和活动环之间的自清洗功能，清洗过滤间隙防止堵塞，泥饼经过充分的脱水后在螺旋轴的推进作用下从卸料口排出。



The conditioned sludge flows into the filter chamber from the flocculation tank and is pushed forward the discharging end. With the gap between the thread of the shaft is getting more and more narrow, the pressure on the sludge is getting higher and higher. Then the water is separated from the sludge and flows out from the gap between the movings and the fixed rings. The movement of the moving rings and the fixed rings cleans the gap between them and prevent the machine from blockage. The filtered sludge cakes are pushed forward by the shaft and finally discharged from the end.



技术优势 Technical Advantages

由于设备结构自身特点和精确的机械设计与加工工艺，叠螺式污泥脱水机具有以下特点：

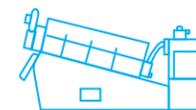
For its special structure, accurate design and processing, Techase® Multi-plate Screw Press is characterized by following features:

专有旋盘预浓缩设计, 适用浓度 3000mg/L-50000mg/L

Exclusive pre-thickening device enables a wide solid concentration ranging from 3000mg/l to 50000mg/l

叠螺式污泥脱水机不仅可处理高浓度污泥，也可对低浓度污泥直接进行浓缩脱水。其适用污泥浓度的范围广，可达3000mg/L-50000mg/L。

The thickening zone and the dewatering zone make the machine applicable to both highly concentrated sludge and that with a high water content. It's able to directly treat sludge with a solid content from 3000mg/l to 50000mg/l.



污泥浓度3000mg/L-50000mg/L

叠螺式污泥脱水机

3000mg/L 50000mg/L

配置专有的旋盘预浓缩装置，更善于处理低浓度污泥

The exclusive pre-thickening device enables excellent performance while dewatering sludge with high water content

① 改善现有重力式浓缩缺点，实现低浓度污泥的高效浓缩

The problems of gravitational thickening disappear and highly efficient thickening is achieved.

② 絮凝与浓缩一体化完成，减轻后续脱水压力

Flocculating and thickening in same time reduce the subsequent dewatering pressure.

③ 结合调节伸缩阀，可将进泥浓度调理到脱水最优状态

Adjusting the expansion valve to make the sludge to be the best state for dewatering.



动定环取代滤布，自清洗、无堵塞，易处理含油污泥

Fixed and moving plates replace filter cloth, self-cleaning, clog-free, easy to handle oily sludge

叠螺式污泥脱水机在螺旋轴的旋转作用下，活动环相对固定环不断错动，从而实现了连续的自清洗过程，避免了传统脱水机普遍存在的堵塞问题。因此抗含油能力强，易分离、不堵塞。而且无需外加水进行高压冲洗，清洁环保，无臭气，无二次污染。

The traditional dewatering equipment are easily got blocked while the multi-plate screw press allows continuous operation with no blocking due to that the moving of the fixed rings and moving rings cleans itself. Therefore, it's especially good at the oily sludge with excellent performance. Moreover, it doesn't need additional water for high-pressure cleaning so that no smell or secondary pollution will be produced.

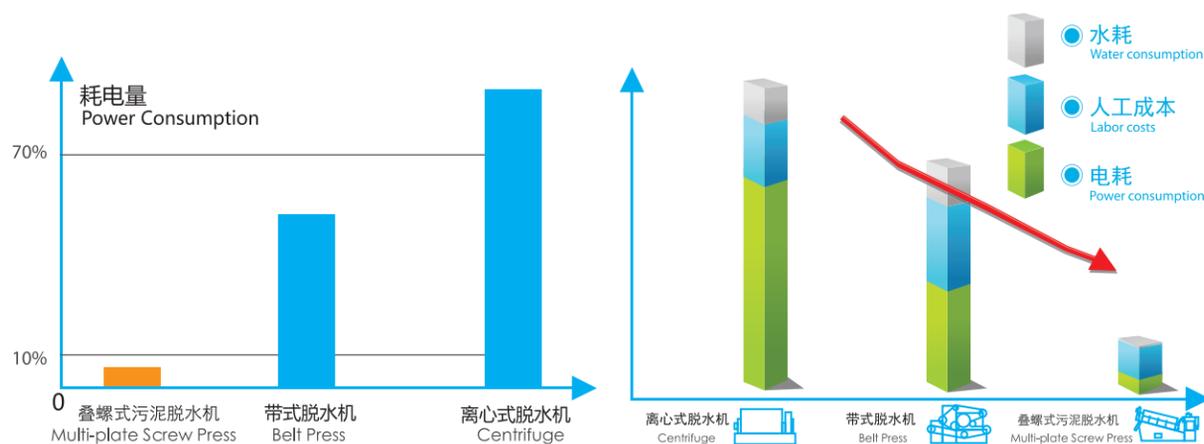


低速运转，无噪音，低能耗，仅为带式机的1/8，离心机的1/20

Low running speed, low noise, low power consumption, 1/8 of Belt Press and 1/20 of centrifuge

叠螺式污泥脱水机依靠容积内压进行脱水，无需滚筒等大型机体，而且运转速度低，仅为2-4转/分钟，因此节水、节能，噪音低，平均能耗为带式机的1/8，离心机的1/20，其单位电耗仅为0.01-0.1kwh/kg-DS，可降低污水处理系统运行成本。

The dewatering of the multi-plate screw press relies on the inner pressure of the filter chamber and the rotating speed is as slow as 2~4 r/min. Therefore, its power consumption is as low as 0.01~0.1 kw/h/kg-DS, only 1/8 of that of belt presses and 1/20 of that of centrifugal machines. In addition, of course there is little noise. Eventually, the operating cost can be greatly saved.



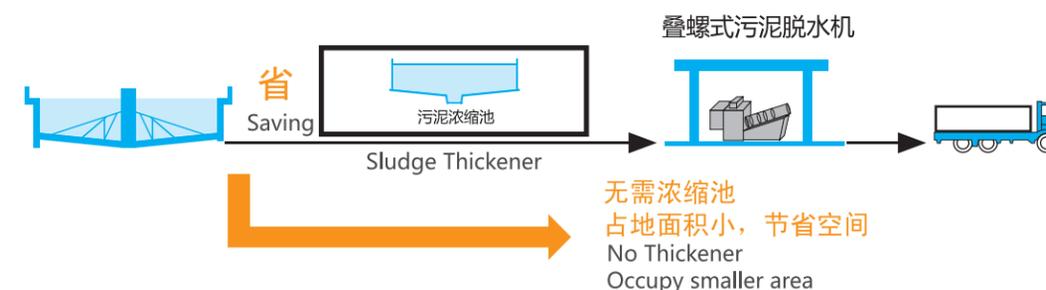
降低基建投资成本，提升处理效果

Less capital construction cost, more excellent working performance

叠螺式污泥脱水机可直接处理曝气池和二沉池污泥，无需设置污泥浓缩池，因此可降低基建总体投资成本，并避免传统污泥浓缩池中磷释放的问题，提升污水处理系统脱磷功能。

The multi-plate screw press can directly treating the sludge from the aeration tank and the secondary sedimentation tank so that the sludge thickening tank is not needed any longer. Therefore, the capital construction cost can be greatly saved and the phosphorus releasing problem is well avoided.

- 节省浓缩池等构筑物土建投资和搅拌机、空压机、冲洗泵等配套设备投资
Save construction investment on sludge thickeners and costs on mixers, air compressors, flushing pumps, and other auxiliary equipments.
- 设备占地面积小，降低脱水机房土建投资
Occupy smaller area, reduce construction investment for dewatering room.



全自动控制，运行管理简单

Fully automatic control, Easy operation and simple maintenance

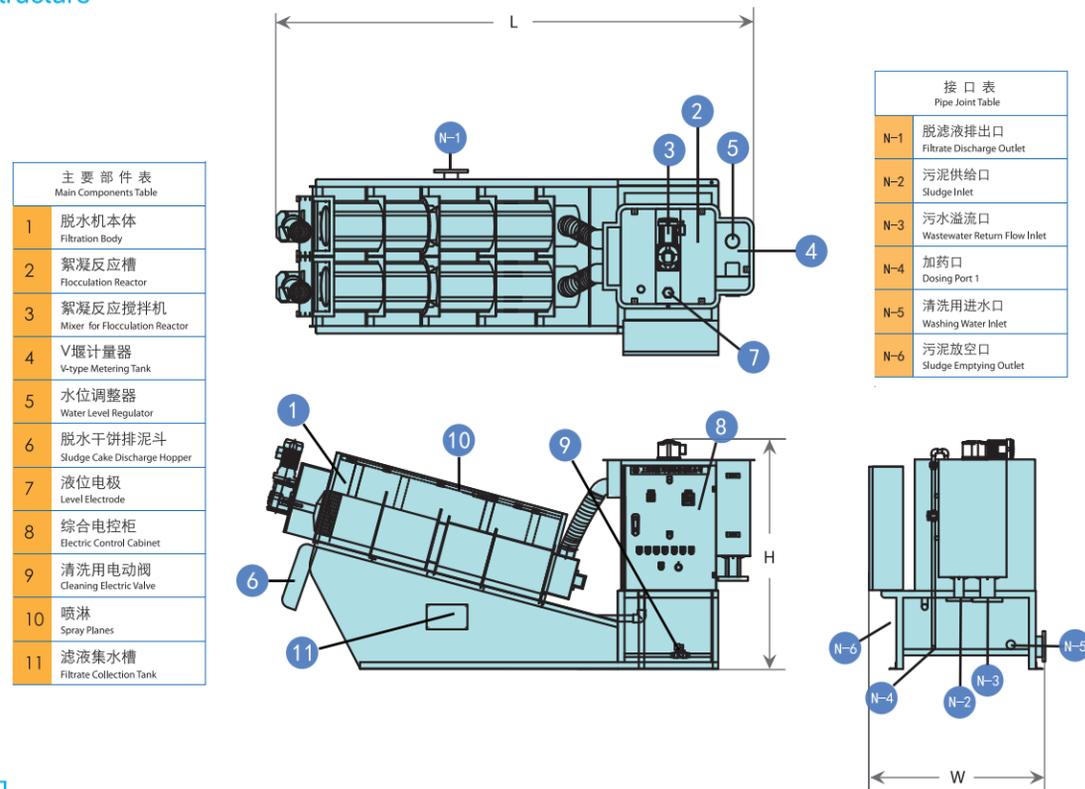
叠螺式污泥脱水机内无滤布、滤孔等易堵塞元件，运行安全简单，根据客户的运行时间段情况，结合自动控制系统，可进行程序设定，实现全自动无人值守。

The multi-plate screw press hasn't any devices like filter clothes or filter pore that are easily blocked. Its operation is safe and easy. It also can be set to operate automatically via the electric control cabinet.



整体构造

Overall Structure



对比情况

Comparison Chart

项目 Content	叠螺式脱水机 Multi-plate Screw Press	板框式脱水机 Frame Filter Press	带式脱水机 Belt Press	离心式脱水机 Centrifuge
低浓度污泥脱水 Dewatering of Low Concentrated Sludge	✓	✗	✗	✗
省浓缩池 no Thickener	✓	✗	✗	✗
24小时自动运行 24-hour automatic operation	✓	✗	✗	✗
占地 Occupied Area	▲	▲▲▲	▲▲▲	▲▲
能耗 Energy Consumption	■	■	■	■
劳动强度 Labor Intensity	😊	😞	😞	😊
噪音 Noise	🔊	🔊	🔊	🔊
维修 Maintenance	😊	😞	😞	😞
运行成本 Operation Cost	💰	💰	💰	💰

TECH型叠螺式污泥脱水机定型表 Setting Table of TECH Multi-plate Screw Press

型号名称	有机标准型	有机专业型	无机标准型	无机专业型
型号代号	A	AG	W	WG
型号标记	TECH-xxx-A	TECH-xxx-AG	TECH-xxx-W	TECH-xxx-WG
型号特点	针对生化污泥及其它有机物料研发设计，性能稳定可靠，性价比更高	在有机标准型的基础上，从设备的配置、电控等方面进行加强，配件等品牌附加值高，满足中高端客户的需求	针对密度大、脱水性和堆积性好的污泥研发设计，性能稳定可靠，性价比更高	在无机标准型的基础上，从设备的配置、电控等方面进行加强，配件等品牌附加值高，满足中高端客户的需求
适用范围	生化污泥： 市政污水厂；食品加工厂；垃圾渗滤液；沼液； 畜禽业生化工艺；卷烟工业 其它有机物料： 蓝藻；畜禽粪便；加药气浮浮渣	与有机标准型相同	无机物料： 钻桩泥浆；河道淤泥； 污水厂初沉污泥；混凝沉淀； 自来水厂沉淀污泥； 电镀污泥	与无机标准型相同

TECH型叠螺式污泥脱水机有机标准型/专业型选型表 Model List of TECH Multi-plate Screw Press

机型 Model	绝干污泥处理量 Dry Solids Capacity (kg-DS/hr)	尺寸 Dimension (mm)			重量 Weight (kg)		电机功率 Motor Power (KW)
		长(L)	宽(W)	高(H)	净重 Net	运行 Operating	总计 Total
TECH-101-A/AG	3~5	1904	977	1160	200	300	0.44
TECH-102-A/AG	6~10	1904	944	1160	300	450	0.62
TECH-103-A/AG	9~15	2029	1150	1160	360	520	0.80
TECH-104-A/AG	12~20	1969	1317	1160	450	700	1.17
TECH-201-A/AG	9~15	2906	964	1335	400	750	0.70
TECH-202-A/AG	18~30	2906	1112	1335	600	900	0.95
TECH-203-A/AG	27~45	3087	1202	1465	850	1300	1.20
TECH-204-A/AG	36~60	3057	1508	1507	1100	1600	1.63
TECH-301-A/AG	30~50	3446	997	1949	1000	1600	1.38
TECH-302-A/AG	60~100	3576	1421	1950	1500	2300	2.13
TECH-303-A/AG	90~150	3757	1638	1950	2000	3000	2.88
TECH-304-A/AG	120~200	4230	2114	2030	2500	3800	3.83
TECH-401-A/AG	90~150	5028	1541	2261	2000	3500	1.93
TECH-402-A/AG	180~300	5028	1649	2261	3000	4500	3.03
TECH-403-A/AG	270~450	5358	2046	2361	4500	7500	4.13
TECH-404-A/AG	360~600	5358	2626	2361	5800	8300	5.23

TECH型叠螺式污泥脱水机无机标准型/专业型选型表 Model List of TECH Multi-plate Screw Press

机型 Model	绝干污泥处理量 Dry Solids Capacity	尺寸 Dimension			重量 Weight		电机功率 Motor Power
	(kg-DS/hr)	(mm)			(kg)		(KW)
		长(L)	宽(W)	高(H)	净重 Net	运行 Operating	总计 Total
TECH-101-W/WG	3~5	1904	977	1160	300	400	0.44
TECH-102-W/WG	6~10	1904	944	1160	450	600	0.62
TECH-103-W/WG	9~15	2029	1150	1160	500	710	0.80
TECH-104-W/WG	12~20	1969	1317	1160	650	900	1.17
TECH-201-W/WG	9~15	2906	964	1335	500	800	0.82
TECH-202-W/WG	18~30	2906	1112	1335	750	1050	1.19
TECH-203-W/WG	27~45	3087	1202	1465	1050	1500	1.56
TECH-204-W/WG	36~60	3057	1508	1507	1250	1750	1.93
TECH-301-W/WG	30~50	3446	997	1949	1250	1850	1.73
TECH-302-W/WG	60~100	3576	1421	1950	2050	2850	2.83
TECH-303-W/WG	90~150	3757	1638	1950	2850	3850	3.93
TECH-304-W/WG	120~200	4230	2114	2030	3350	4650	5.03
TECH-401-W/WG	90~150	5028	1541	2261	2400	3900	2.33
TECH-402-W/WG	180~300	5028	1649	2261	4000	5500	3.83
TECH-403-W/WG	270~450	5358	2046	2361	5800	8800	5.33
TECH-404-W/WG	360~600	5358	2626	2361	7600	10100	6.83

※ 本表数据中处理量仅供参考，实际情况会根据污泥性质不同产生变化，详情请致电联系我司。

管径表 Pipe Specification

管型 Pipe Type	机型 / MSP Model															
	101	102	103	104	201	202	203	204	301	302	303	304	401	402	403	404
污泥进料管径(mm) Sludge Feed Pipe	DN25	DN25	DN40	DN40	DN40	DN40	DN50	DN50	DN50	DN65	DN65	DN65	DN80	DN80	DN150	DN150
污泥回流管径(mm) Sludge Backflow Pipe	DN50	DN50	DN80	DN80	DN80	DN80	DN80	DN80	DN80	DN100	DN100	DN125	DN150	DN150	DN200	DN200
药注管径(mm) Chemical Dosing Pipe	DN20	DN20	DN20	DN20	DN20	DN20	DN20	DN20	DN20	DN20	DN20	DN25	DN25	DN25	DN32	DN32
喷淋管径(mm) Shower Pipe	DN20	DN20	DN20	DN20	DN20	DN20	DN25	DN20	DN25	DN40						
滤液排出管径(mm) Filtrate Discharge Pipe	DN80	DN80	DN80	DN80	DN80	DN80	DN125	DN100	DN125	DN125	DN125	DN125	DN150	DN200	DN200	
排空管管径(mm) Emptying Pipe	DN25	DN25	DN25	DN25	DN25	DN25	DN50	DN50	DN40	DN40	DN40	DN50	DN50	DN50	DN50	

其它行业专用机 Special Multi-plate Screw Press

为满足相关行业用户的特殊需求，同臣环保针对行业特点，结合公司技术创新优势，不断为各行业用户量身定制有针对性的行业专用解决方案，其中包括石化、造纸、淀粉蛋白、化工制药、蓝藻、无机物料及果蔬加工等行业专用叠螺式污泥脱水系统。

To meet the special requirements of customers from various related industries, using our technological superiority based on the industry characteristics, we continuously offer customerized and personalized solution to sludge dewatering for different industries, such as petrochemistry industry, paper industry, amyloid, chemical industry, blue-green algae, pectin wastewater, inorganic material, so on and so force.



石化行业专用机 Special Multi-plate Screw Press for Petrochemical Industry

- ◎ 过滤本体采用石化专用轴型和增强型驱动系统，适合石化行业物料的推流特点
The filter body uses special shafts and the strengthened driving system.
- ◎ 动定环采用更高防腐性能材料，适应石化行业氯离子高的运行环境
The moving plates and fixed plates are made from more anti-corrosive materials.
- ◎ 设备整体配套达到EXDIIBT4的防爆等级，满足石化行业严格的防爆要求
The explosion protection level of the equipment can reach EXDIIBT4.



▶ 适用场合 (Use occasions)

海上钻井平台、石油炼化单位、沥青、橡胶等石化衍生行业、废油回收行业等
Offshore drilling platform; Petroleum refining units; Asphalt, rubber and other derivative petrochemical industries; and Waste oil recycling industry

果蔬加工行业专用机 Special Multi-plate Screw Press for Fruit&Vegetable Industry

- ◎ 采用果蔬加工行业专用螺旋轴
The special shafts which fit for Fruit&Vegetable Industry
- ◎ 全自动运行，无堵塞、压榨效果好
Fully automatic operation, Clog-free, High outlet dryness
- ◎ 低转速、低能耗、低噪音
Low running speed, Low energy consumption, Low noise



▶ 适用场合 (Use occasions)

罐头加工行业的废水处理：如黄桃罐头、橘子罐头、荔枝罐头、苹果罐头、梨罐头等；果汁加工行业的废水处理
Wastewater treatment in canned food processing and fruit juice processing industry

造纸行业专用机 Special Multi-plate Screw Press for Paper Industry

- ◎ 采用纤维泥渣专用轴型
The special shafts which fit for the paper sludge dewatering
- ◎ 满足含纤维污泥脱水需求的驱动系统，适应纤维污泥脱水的运转状态
The driving system meets the requirements of the fiber dregs dewatering and the operating status is more adaptable to the fiber sludge
- ◎ 污泥刮板设计保证污泥出料口不堵塞，更顺畅
The scraper is designed to make sure that sludge outlet is not blocked

适用场合 (Applicable projects)

造纸厂的污泥处理、废浆脱水、人造板厂的污泥处理
Sludge treatment of Paper mill; Dewatering of the waste seriflux; Sludge treatment of wood-based panel factory



淀粉蛋白行业专用机 Special Multi-plate Screw Press for Amyloid Industry

- ◎ 采用糟渣专用轴型及满足糟渣脱水需求的驱动系统
The Special shafts which fit for the amyloid dregs dewatering and the driving system meets the requirements of the amyloid dregs dewatering
- ◎ 设备结构及材质适应50-70℃高温物料特性
The structure and material of the equipment are adaptable to a higher feed material temperature of 50-70 °C
- ◎ 污泥刮板设计保证污泥出料口不堵塞，更顺畅
The scraper is designed to make sure that sludge outlet is not blocked

适用场合 (Applicable projects)

小麦、玉米、木薯；大豆、花生、淀粉蛋白；木糖渣、中药渣、酒糟、醋糟
Wheat/Corn/Cassava Starch; Soybean/Peanut/Starch protein; Xylose/Medicine/Vinegar/Juice Drinks dregs



蓝藻脱水专用机 Special Multi-plate Screw Press for Blue Algae Dewatering

- ◎ 采用蓝藻专用轴型
The special shafts which fit for the blue algae dewatering
- ◎ 配套蓝藻专用絮凝剂
Special flocculant is used for the blue algae.
- ◎ 适合船载的结构设计，满足蓝藻边打捞边处理的作业方式
Shipborne structure suits the operating mode that the algae are refloated while being treated

适用场合 (Applicable projects)

蓝藻水华发生的水域
The water area where blue algal blooms occur



叠螺式污泥脱水系统 MSP Sludge Dewatering System

同臣以叠螺式污泥脱水机为核心，为客户提供先进的污泥处理处置技术方案及与之相配套的成套设备供应，无害化、稳定化、减量化、资源化处理各种污泥。

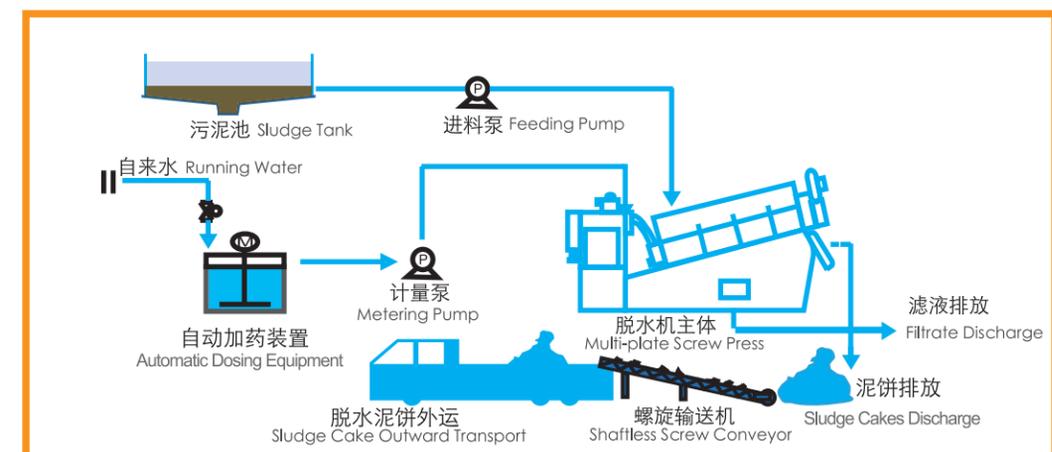
Besides the core equipment Techase® Multi-plate Screw Press, we also provide advanced environmental sludge treatment & disposal solutions for the customers as well as devices needed by the system.

系统组成 System Components

- ◎ **核心产品：**叠螺式污泥脱水机
Core product: multi-plate screw press
- ◎ **自动加药装置：**设备计量精确，节约药剂，减少运行费用
Automatic Polymer Station: accurate metering, chemical saving, operation cost saving
- ◎ **污泥输送设备：**无轴螺旋输送机物料输送流畅，噪音小，能耗低
Shaftless Sludge Conveyor: smooth conveying, little noise, low power consumption
- ◎ **泵类产品：**潜污泵、螺杆泵、计量泵等泵类设备，运行安全可靠
Pumps: pumps of high safety and reliability, such as submersible sewage pumps, screw pumps, metering pumps
- ◎ **絮凝剂产品：**配套的絮凝剂具有絮凝效果显著，无毒无味，无二次污染等优点
Flocculant: of good flocculation performance, harmless, no smell, no secondary pollution

主要特点 Key Features

- ◎ 工艺流程简单，污泥脱水高效节能，系统投资小
Simple process, high efficiency, power saving, low investment
- ◎ 系统可进行程序设定，使操作运行更方便准确
Programme setting makes the operation convenient and accurate
- ◎ 独有的絮凝药剂，使污泥更容易脱水
Exclusive flocculant helps with the dewatering performance
- ◎ 配药均匀准确，节省运行费用
Accurate chemical preparation and dosage saves much operation cost.



典型业绩 Typical Cases

叠螺式污泥脱水机可广泛用于市政污水处理工程以及石化、轻工、化纤、造纸、制药、皮革等工业行业的水处理系统。实际运行情况证明，同臣生产的叠螺式污泥脱水机为用户创造了可观的经济效益和社会效益。

Multi-plate Screw Press can be widely used for various wastewater treatment systems such as municipal, petrochemical, chemical fiber, paper-making, pharmaceutical, leather and other industrial water treatment system. The practical operation shows that Techase® Multi-plate Screw Press can bring considerable economic and social benefits for users.



项目名称： 南极中山站生活污水项目
(Project): Wastewater Treatment Project at Zhongshan Station in Antarctic

行业类型： 生活污水
(Industry): Domestic Wastewater

项目名称： 上海老港垃圾填埋场
(Project): Shanghai Laogang Landfill

行业类型： 市政污水
(Industry): Municipal Wastewater



项目名称： 宁波秀可食品有限公司
(Project): Ningbo Showco Food CO.,Ltd

行业类型： 果蔬加工行业
(Industry): Fruit and Vegetable Processing Wastewater

项目名称： 越南胡志明市污水处理厂
(Project): The Wastewater Treatment Project of Ho Chi Minh City, Vietnam

行业类型： 市政污水
(Industry): Municipal Wastewater



项目名称： 新疆克拉玛依油田
(Project): Karamay oilfield of Xinjiang

行业类型： 石化行业
(Industry): Petrochemical Wastewater

项目名称： 中国石化齐鲁分公司橡胶厂
(Project): The Rubber Factory of SINOPEC Qilu Branch

行业类型： 石化行业
(Industry): Petrochemical Wastewater



项目名称： 郑州宇通重工有限公司
(Project): Zhengzhou Yutong heavy industries, Ltd

行业类型： 石化行业
(Industry): Petrochemical Wastewater

项目名称： 天津中海油含油污泥脱水处理项目
(Project): The Oily sludge Treatment Project of Tianjin CNOOC

行业类型： 石化行业
(Industry): Petrochemical Wastewater



项目名称： 一汽解放汽车有限公司无锡柴油机厂
(Project): Faw Jiefang Automotive co., Ltd Wuxi Diesel Engine Works

行业类型： 石化行业
(Industry): Petrochemical Wastewater

项目名称： 中国百事（上海）分公司污水处理站
(Project): China PEPSI (Shanghai) branch of sewage treatment plant

行业类型： 生活污水
(Industry): Domestic Sewage Wastewater



北京环卫集团

项目名称： 北京环卫集团
(Project): Beijing Environmental Sanitation Engineering Group Limited

行业类型： 餐厨垃圾
(Industry): Kitchen Waste

项目名称： 华晨宝马汽车有限公司污水处理站工程
(Project): BMW Brilliance Sewage Treatment project

行业类型： 机加工废水
(Industry): Machining Wastewater



项目名称： 浙江凯恩特种材料股份有限公司
(Project): Zhejiang Kan Specialities Material Co., Ltd

行业类型： 造纸行业
(Industry): Papermaking Wastewater

项目名称： 上海药明康德新药开发有限公司
(Project): Shanghai AppTec Co., Ltd

行业类型： 制药行业
(Industry): Pharmaceutical Wastewater

