



# LEADING FILTER 核盛过滤 | 引领过滤科技 TECHNOLOGY

**青岛核盛智能环保设备有限公司**  
QINGDAO HESHENG INTELLIGENT ENVIRONMENTAL PROTECTION EQUIPMENT CO., LTD.

**烟台核盛过滤机械有限公司**  
YANTAI HESHENG FILTRATION MACHINERY CO., LTD.



**盘式过滤机手册**  
DISC FILTER MANUAL

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## COMPANY PROFILE

### 企业简介

青岛核盛智能环保设备有限公司是专业从事智能过滤设备的生产、研发和销售的高科技企业。公司聚集了中国从事过滤行业的顶尖人才，积累了二十多年的研发、生产、销售和服务经验，拥有先进的智能机加工设备。严格的质量控制、优质的售后服务、超前的创新意识和能力，使公司始终走在过滤行业的技术前沿。

公司的主要产品有：水平带式真空过滤机、陶瓷真空过滤机、叠式压滤机、智能压榨过滤机、水

平带式加压过滤机、加压叠盘过滤机、带式真空震筛过滤机、离心机、管式过滤器等产品。广泛应用于化工、矿山、冶金、化肥、医药、食品、造纸、环保、污水处理、尾矿处理等行业。

**公司秉承“为客户创造价值，让员工实现梦想，为社会创造财富”的经营理念，为用户提供高质量的产品和科学的过滤解决方案。**

**核盛环保，为您创造价值！**

Qingdao Hesheng Intelligent Environmental Protection Equipment Co., Ltd. is a high-tech enterprise in production, R & D and sales for intelligent filters. We gathered the top talents in Chinese filtration field, they have more than 20 years' experience in R & D, production, sales and services. We have advanced intelligent machining equipment, the rigorous quality control system and high-class after-sales service system, the advanced innovation consciousness and ability to make us always walk at the forefront of the filter industry.

Our main products as follows: Horizontal Vacuum Belt Filter, Ceramic Disc Filter, Stacked Filter Press, Intelligent Horizontal Press Filter, Horizontal belt press filter, disc press filter, vacuum belt shaking filter, Centrifuge, Disc press filter, Belt vacuum vibrating stage dewatering machine, tubular filter, high efficiency thickener and so on. They are widely used in chemical industry, mining,

metallurgy, fertilizer, medicine, food, paper-making, environmental protection, waste water treatment and tailings dewatering industries.

**We adhering to the "Creating value for clients, Realizing dreams for employees, Creating wealth for society" business philosophy, to provide high-quality equipment and scientific filtration proposal for users.**

**Hesheng Environmental Protection, Creat Value for You.**

COHESION  
VIRTUE 厚德 聚力  
创新 共赢  
WIN-WIN  
INNOVATION

## ENTERPRISE CULTURE

## 企业文化

### 核心价值观 / CORE VALUE

厚德，聚力，创新，共赢。  
VIRTUE, COHESION, INNOVATION, WIN-WIN.

### 核心竞争力 / CORE COMPETITIVENESS

团队协作，持续创新。  
Team Work, Continuous Innovation.

### 企业精神 / ENTERPRISE SPIRIT

仁爱，坚韧，诚信，担当。  
Benevolence, Tenacity, Honesty, Responsibility.

### 企业愿景 / ENTERPRISE VISION

员工幸福，团队一流，科技领先，全球品牌。  
Happy Employees, First-class Team, Leading Technology, Global Brand.

### 经营理念 / BUSINESS PHILOSOPHY

为客户创造价值，为员工实现梦想，为社会创造财富。  
Creating Value for Clients, Realizing Dreams for Employees, Creating Wealth for Society.

### 企业使命 / ENTERPRISE MISSION

使过滤机更加智能高效，让核盛过滤走向世界。  
To Make the Filter More Intelligent and Efficient, to Make Hesheng Brand Filter to All Over the World.

### 安全理念 / SAFETY CONCEPT

岗位安全，环境安全，生产安全，出入安全。  
Post Safety, Environment Safety, Production Safety, Access Safety

### 管理理念 / MANAGEMENT PHILOSOPHY

尊重融合，开放包容，科学决策，高效务实。  
Respect Integration, Openness and Inclusiveness, Scientific Decision-making, Efficiency and Pragmatism.

### 质量方针 / QUALITY POLICY

精益求精，用户满意，持续改进，追求卓越。  
Make Perfection More Perfect, Customer Satisfaction, Continuous Improvement, Pursuit of Excellence.

## ENTERPRISE QUALIFICATION

## 企业资质



分级布料装置  
CLASSIFIED SLURRY FEEDER



风潮清洗装置以及  
橡胶带式过滤器  
HIGH PRESSURE WATER WASHING  
DEVICE AND RUBBER BELT FILTER



隔离振动装置  
ISOLATED VIBRATION DEVICE



滤布再生装置  
FILTER CLOTH  
REGENERATION DEVICE



热风干燥装置  
HOT AIR-DRYING  
DEVICE



水平带式加压过滤器  
HORIZONTAL PRESSURE BELT FILTER



四缸立式压滤机  
FOUR-CYLINDER VERTICAL  
FILTER PRESS



橡胶带气垫支撑装置  
RUBBER BELT AIR CUSHION  
SUPPORT DEVICE



压滤机用料浆腔膜  
一体化结构  
INTEGRATED STRUCTURE OF SLURRY  
CHAMBER & MEMBRANE FOR FILTER PRESS



一种单缸结构压滤机  
A KIND OF SINGLE CYLINDER  
STRUCTURE FILTER PRESS



一种导流式下卸料离心机  
A KIND OF DIVERSION DOWN  
DISCHARGE CENTRIFUGE



用于压滤机的两缸动力装置  
TWO-CYLINDER  
DRIVE DEVICE FOR FILTER PRESS



真空分区装置及其具有  
的水平橡胶带式真空过滤器  
VACUUM PARTITION DEVICE AND  
HORIZONTAL VACUUM BELT FILTER  
WITH THIS DEVICE



转鼓密封装置  
DRUM SEALING DEVICE



N7289 MD+LVD+EMC



N7290 MD+LVD+EMC



N7291 MD+LVD+EMC



计算机软件著作权登记证书  
REGISTRATION CERTIFICATE  
OF COMPUTER SOFTWARE COPYRIGHT



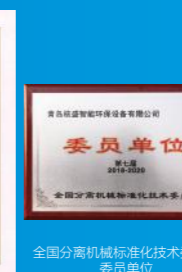
营业执照



知识产权管理体系认证证书  
DRUM SEALING DEVICE



质量证书副本  
QUALITY MANAGEMENT  
SYSTEM CERTIFICATE; ISO9001



全国分离机械标准化技术委员会  
委员单位  
NATIONAL STANDARDIZATION  
TECHNICAL COMMITTEE OF SEPARATION  
MACHINERY—COMMITTEE MEMBER



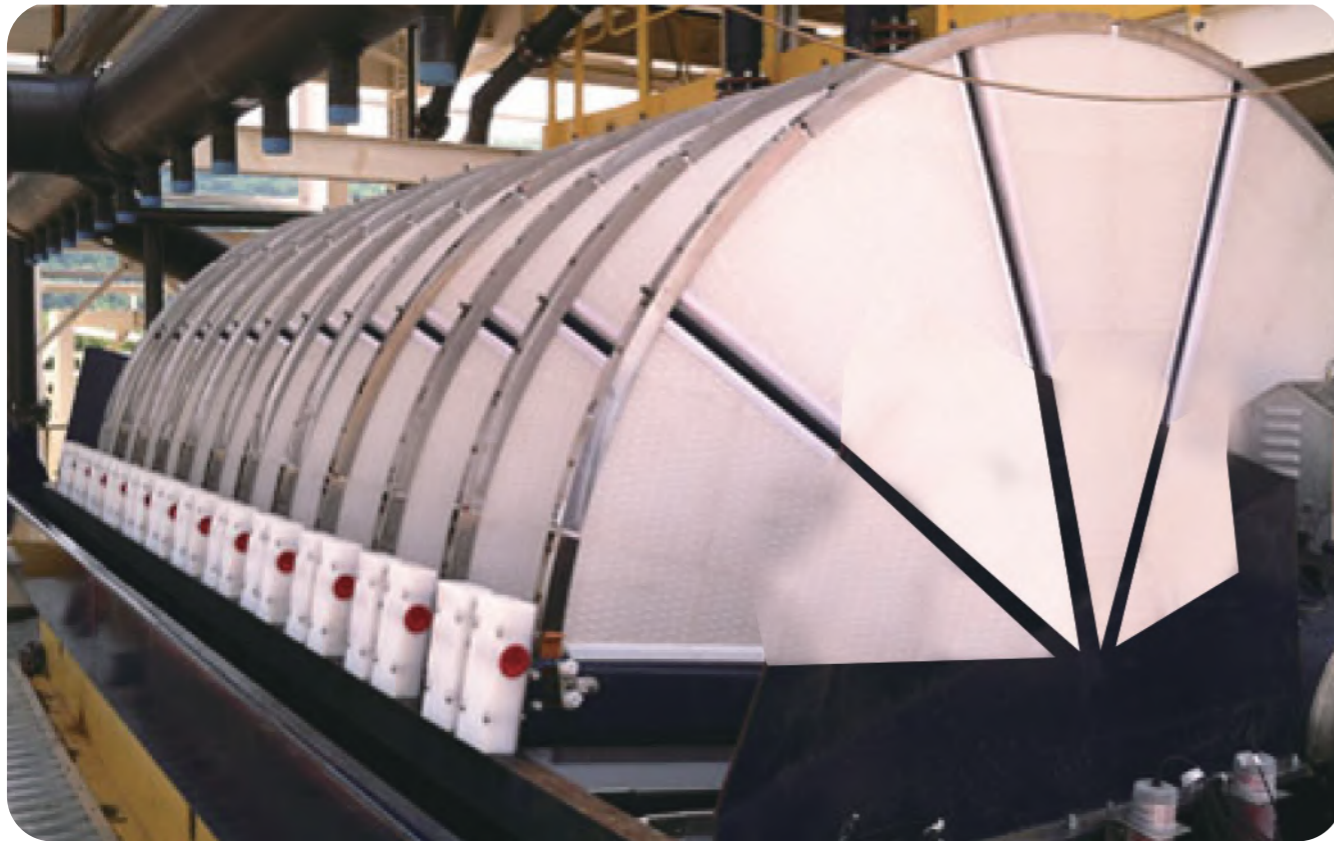
信用等级评价证书 AAA  
ENTERPRISE CREDIT EVALUATION CERTIFICATE OF ENTERPRISE  
AAA



资信等级证书  
CREDIT GRADE



**LPZ VACUUM VERTICAL DISC FILTER / LPZ立盘式真空过滤机**



**EQUIPMENT INTRODUCTION / 设备简介**

LPZ立盘式真空过滤机是通过真空负压完成对料浆的分离过滤。本公司在经过潜心钻研及反复试验，一举推出了新一代LPZ立盘式真空过滤机。LPZ立盘式真空过滤机具有占地面积小，效率高，过滤布寿命长，易更换，最大的优势在于提高设备单位面积利用率，较之前诸多种设备来讲，处理能力提高2-3倍。而且应用行业和领域也得到了广泛推广。

LPZ vacuum vertical disc filter completes separation and filtration of slurry by vacuum negative pressure. After dedicated researching and repeated tests, our company has launched a new generation disc filter: LPZ vacuum vertical disc filter. It has advantages of small footprint, high efficiency, long life of filter cloth and easy to replace. The biggest strength is that unit area utilization of equipment is improved, and processing capacity is improved by 2-3 times compared with previous various equipment. Application industries and fields have also been widely expanded.

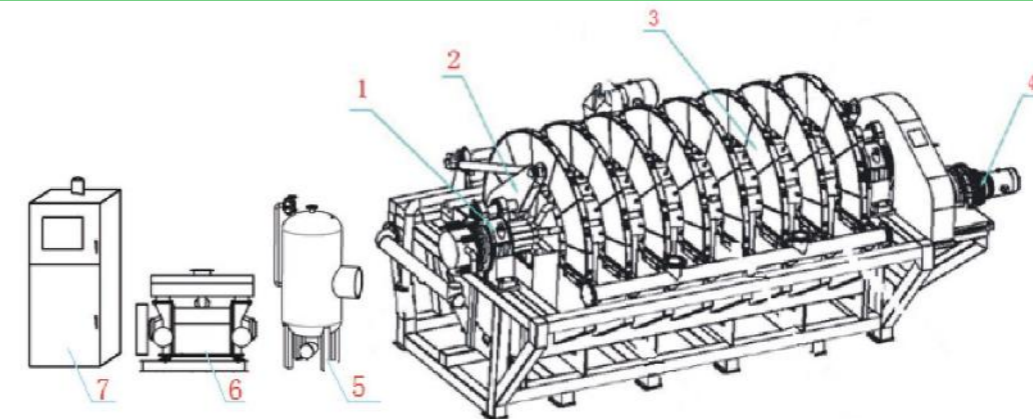
**WORKING PRINCIPLE / 工作原理**

LPZ立盘式真空过滤机由几个至十几个立式的圆盘组成主要的过滤平台，每一个立式圆盘又由多个扇形过滤腔组成，各个扇形滤腔为独立的过滤单元，由过滤布套在扇形骨架上形成滤室。通过减速器带动立式圆盘组按顺时针方向转动，料浆在真空吸力的作用下吸附在扇形滤室表面，在过滤盘两侧形成滤饼，随着圆盘的转动，在过滤机分配阀上分配有若干个区域，可以完成对已吸附滤饼的进一步干燥脱水，同时根据料浆性质可以完成对滤饼的洗涤，再干燥等过程，拓宽使用行业及领域。滤饼再经过卸料区由反吹风和卸料刮刀卸料落入排料槽，整个作业过程连续循环进行。料仓底部设有平行转动搅拌装置，此装置减少电力消耗，同时达到最佳的搅拌效果，尤其是在料浆沉淀迅速的场合。滤布自动清洗装置可完成在滤布不拆卸的情况下实现高压滤布清洗再生，大大节省维护时间。

LPZ立盘式真空过滤机包括1主机，2搅拌系统，3过滤圆盘，4驱动系统，5真空排液系统。

LPZ vacuum vertical disc filter consists of several to a dozen vertical discs to form a main filtration platform, and each vertical disc is composed of multiple sector filter chambers. Each sector filter chamber is an independent filtration unit, and filter cloth is covered on sector skeleton to form a filter chamber. Clockwise rotation of vertical discs is driven by gearbox, and slurry is adsorbed on the surface of sector filter chamber under the action of vacuum suction, then filter cake is formed on both sides of filter discs. As discs rotate, several areas are divided on filter distribution valve to complete further drying and dewatering of adsorbed filter cake. At the same time, according to different nature of slurry, filter cake washing, drying and other processes can be completed, and application industries and fields can be broadened. Filter cake is discharged from discharge area into discharge chute by back blowing and scraper, and the whole process is cycled continuously. The bottom of slurry tank is equipped with a parallel rotational agitation device, which reduces power consumption and achieves the best agitation effect, especially in the case of rapid slurry sedimentation. Automatic filter cloth washing device can realize filter cloth washing with high pressure water without removing filter cloth, which saves maintenance time greatly.

LPZ vacuum vertical disc filter consists of 1--main machine, 2--agitation system, 3--filter disc, 4--drive system, 5--vacuum filtrate discharge system.

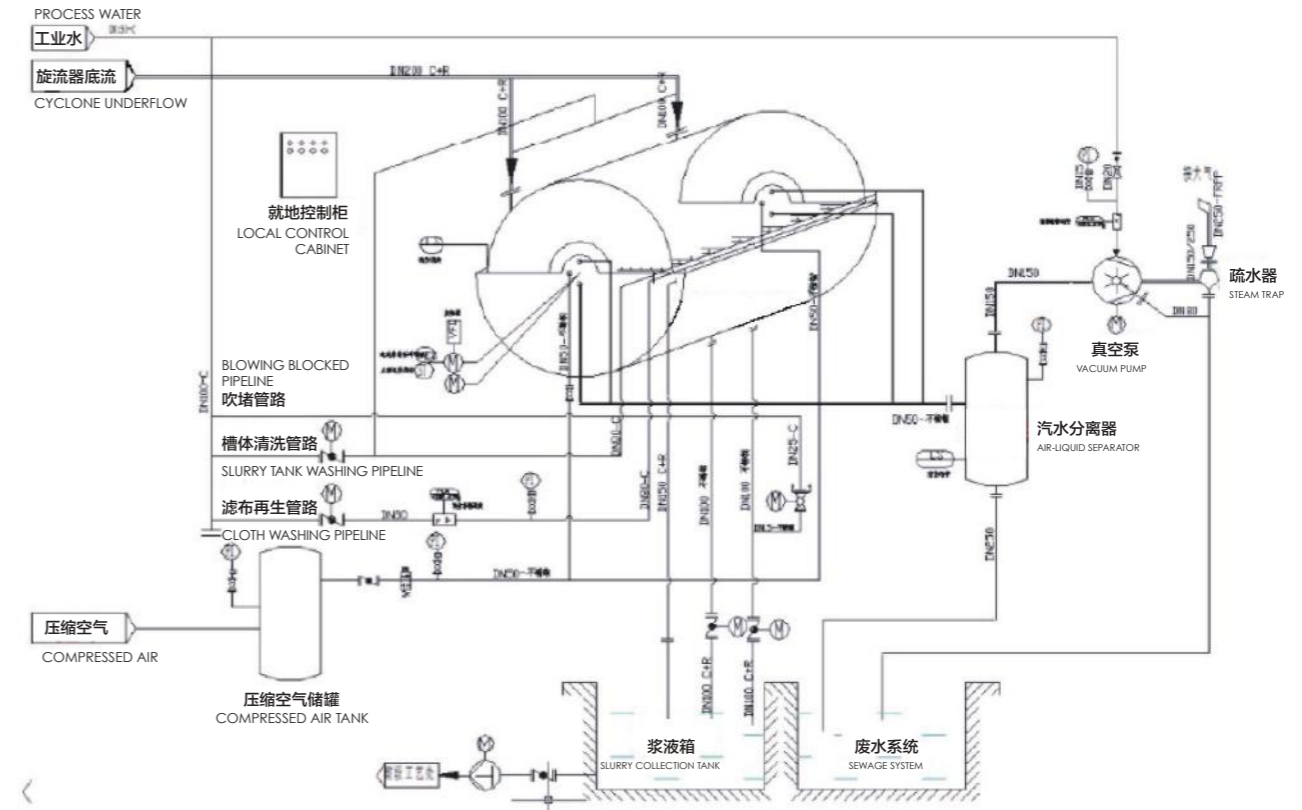


## EQUIPMENT FEATURES / 设备特点

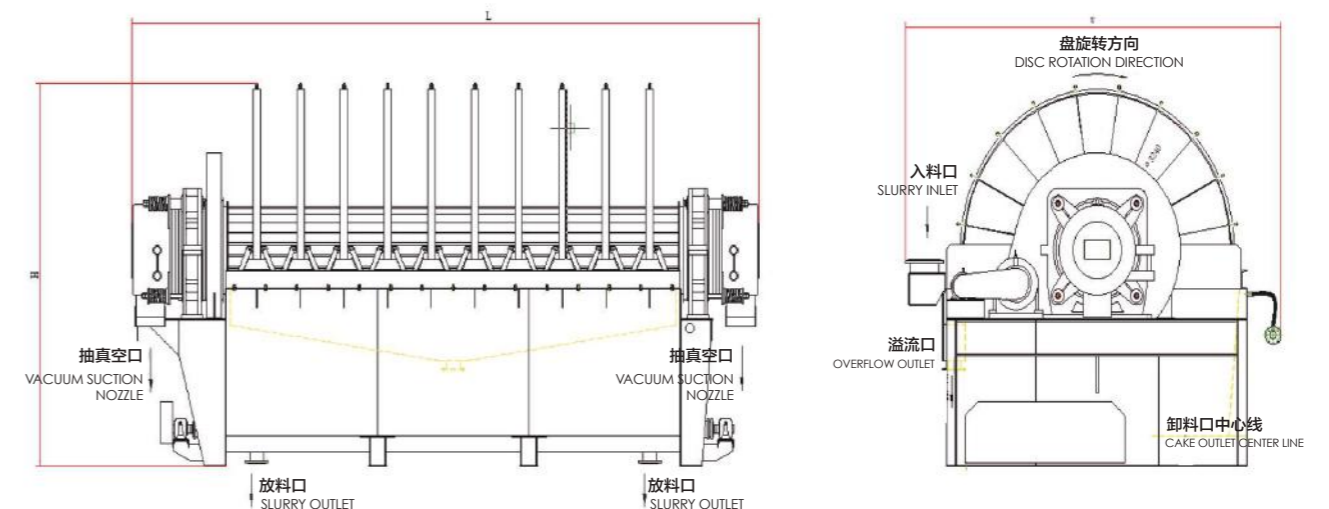
- ①组成过滤圆盘的扇形滤腔表面布满斗式滤孔，此结构可使扇形滤腔骨架的过滤面积率达到最佳，由高强度、高韧性的塑料或有机材料制成，寿命提高了数倍。
- ②过滤布与扇形滤腔匹配，锁紧、压扣方便。
- ③高压自动清洗装置，可以满足全方位无死角对滤布进行再生性清洗，保持了其良好的脱水效果。
- ④突破现有摆杆搅拌不均匀，及浆叶式搅拌造价高密封性能不稳定的问题。摆架搅拌装置既可以多级调速，也可以根据料浆特性采用不同的摆浆形式。
- ⑤过滤扇与滤液管道连接采用模块固定，更加简便、更换快捷。
- ⑥分配阀划分多个区域，满足不同料浆对工艺设定的需求。
- ⑦立盘过滤机采用无动力排液方式，更加节能，较以往的辅助强制排液结构简约。
- ⑧卸料区域除了利用反吹风大面积卸料外，还设置了柔性卸料机构，可以将贴近滤布表面的物料进一步剥离，有助于滤布再生及滤饼回收。

- ① The surface of sector filter chamber constituting filter disc is covered with bucket filter holes. This structure can optimize filtration area ratio of sector filter chamber skeleton. It is made of high-strength, high-toughness plastic or organic material, and service life has been increased several times.
- ② Filter cloth matches sector filter chamber to realize convenient locking and pressing.
- ③ High-pressure automatic washing device can wash filter cloth exhaustively in all directions and maintain good dewatering effect of filter cloth.
- ④ Break through existing problems that swing rod is not agitated uniformly, paddle agitation cost is high and sealing performance is unstable. New swing frame agitation device has multistage speed regulation function, and different swing forms can also be used according to slurry characteristics.
- ⑤ Connection between filter sector and filtrate pipeline is fixed by modules, which is simpler, more convenient and quicker to replace.
- ⑥ Distribution valve divides multiple areas to meet needs of process designs for different slurry.
- ⑦ Vertical disc filter adopts unpowered filtrate discharge mode, which is more energy-saving and simpler than previous auxiliary forced filtrate discharge structure.
- ⑧ In addition to using back blowing to discharge large-area cake, cake discharge area is also setted with a soft discharge mechanism, which can further discharge cake that is close to the surface of filter cloth, and contribute to filter cloth washing and filter cake recovery.

## PROCESS FLOW & LAYOUT DIAGRAM / 设备工艺布置图



## EQUIPMENT MODEL / 设备型号



**Φ2100系列圆盘式过滤机技术参数**  
 SERIES DISC FILTER TECHNICAL PARAMETERS

滤盘直径 (mm) DISC DIAMETER (mm)	Φ2100											
过滤面积 (m <sup>2</sup> ) FILTRATION AREA (m <sup>2</sup> )	5	10	15	20	25	30	35	40	45	50	60	
滤盘数量 (块) DISC QTY (pcs)	1	2	3	4	5	6	7	8	9	10	11	
主轴电机功率 (kw) MAIN SPINDLE MOTOR POWER (kw)	2.2		3			4		5.5				
搅拌电机功率 (kw) AGITATION MOTOR POWER (kw)	3		4			5.5		7.5				
卸料方式 CAKE DISCHARGE WAY	反吹风+刮刀 BACK BLOWING + SCRAPER											
外形尺寸 OUTLINE DIMENSION	长 L (mm)	2145	2535	2925	3315	3705	4095	4485	4875	5265	5655	6435
	宽 W (mm)	2480										
	高 H (mm)	2690										
处理能力 FILTER CAPACITY	0.85-1.2t/h · m <sup>2</sup> (每平方米每小时处理铁精粉0.85吨~1.2吨) 0.85-1.2t/h · m <sup>2</sup> (IRON ORE CONCENTRATE)  0.2-1.2t/h · m <sup>2</sup> (不同物料每平方米每小时的处理量不同) 0.2-1.2t/h · m <sup>2</sup> (DIFFERENT PROCESSING CAPACITY FOR DIFFERENT MATERIALS)											

备注: 每圈滤盘的数量均为20块  
 Note: plate sector of each disc is 20 pcs.

**Φ2600系列圆盘式过滤机技术参数**  
 SERIES DISC FILTER TECHNICAL PARAMETERS

滤盘直径 (mm) DISC DIAMETER (mm)	Φ2600											
过滤面积 (m <sup>2</sup> ) FILTRATION AREA (m <sup>2</sup> )	40	48	56	64	72	80	88	96				
滤盘数量 (块) DISC QTY (pcs)	5	6	7	8	9	10	11	12				
主轴电机功率 (kw) MAIN SPINDLE MOTOR POWER (kw)	5.5			7.5				11				
搅拌电机功率 (kw) AGITATION MOTOR POWER (kw)	7.5			11				15				
卸料方式 CAKE DISCHARGE WAY	反吹风+刮刀 BACK BLOWING + SCRAPER											
外形尺寸 OUTLINE DIMENSION	长 L (mm)	4435	4885	5335	5785	6235	6685	7135	7585			
	宽 W (mm)	3300										
	高 H (mm)	3200										
处理能力 FILTER CAPACITY	0.85-1.2t/h · m <sup>2</sup> (每平方米每小时处理铁精粉0.85吨~1.2吨) 0.85-1.2t/h · m <sup>2</sup> (IRON ORE CONCENTRATE)  0.2-1.2t/h · m <sup>2</sup> (不同物料每平方米每小时的处理量不同) 0.2-1.2t/h · m <sup>2</sup> (DIFFERENT PROCESSING CAPACITY FOR DIFFERENT MATERIALS)											

备注: 每圈滤盘的数量均为20块  
 Note: plate sector of each disc is 20 pcs.

**Φ3100系列圆盘式过滤机技术参数**  
 SERIES DISC FILTER TECHNICAL PARAMETERS

滤盘直径 (mm) DISC DIAMETER (mm)	Φ3100							
过滤面积 (m <sup>2</sup> ) FILTRATION AREA (m <sup>2</sup> )	48	60	72	84	96	108	120	
滤盘数量 (块) DISC QTY (pcs)	4	5	6	7	8	9	10	
主轴电机功率 (kw) MAIN SPINDLE MOTOR POWER (kw)	5.5		7.5			11		
搅拌电机功率 (kw) AGITATION MOTOR POWER (kw)	7.5		11			15		
卸料方式 CAKE DISCHARGE WAY	反吹风+刮刀 BACK BLOWING + SCRAPER							
外形尺寸 OUTLINE DIMENSION	长 L (mm)	4235	4735	5235	5735	6235	6735	7235
	宽 W (mm)	4280						
	高 H (mm)	3740						
处理能力 FILTER CAPACITY	0.85-1.2t/h · m <sup>2</sup> (每平方米每小时处理铁精粉0.85吨~1.2吨) 0.85-1.2t/h · m <sup>2</sup> (IRON ORE CONCENTRATE) 0.2-1.2t/h · m <sup>2</sup> (不同物料每平方米每小时的处理量不同) 0.2-1.2t/h · m <sup>2</sup> (DIFFERENT PROCESSING CAPACITY FOR DIFFERENT MATERIALS)							

备注: 每圈滤盘的数量均为20块  
 Note: plate sector of each disc is 20 pcs.

**Φ4100系列圆盘式过滤机技术参数**  
 SERIES DISC FILTER TECHNICAL PARAMETERS

滤盘直径 (mm) DISC DIAMETER (mm)	Φ4100								
过滤面积 (m <sup>2</sup> ) FILTRATION AREA (m <sup>2</sup> )	120	140	160	180	200	220	240	260	
滤盘数量 (块) DISC QTY (pcs)	6	7	8	9	10	11	12	13	
主轴电机功率 (kw) MAIN SPINDLE MOTOR POWER (kw)	11		15			18.5			
搅拌电机功率 (kw) AGITATION MOTOR POWER (kw)	15		18.5			22			
卸料方式 CAKE DISCHARGE WAY	反吹风+刮刀 BACK BLOWING + SCRAPER								
外形尺寸 OUTLINE DIMENSION	长 L (mm)	5565	6115	6665	7215	7765	8315	8865	9415
	宽 W (mm)	5080							
	高 H (mm)	4640							
处理能力 FILTER CAPACITY	0.85-1.2t/h · m <sup>2</sup> (每平方米每小时处理铁精粉0.85吨~1.2吨) 0.85-1.2t/h · m <sup>2</sup> (IRON ORE CONCENTRATE) 0.2-1.2t/h · m <sup>2</sup> (不同物料每平方米每小时的处理量不同) 0.2-1.2t/h · m <sup>2</sup> (DIFFERENT PROCESSING CAPACITY FOR DIFFERENT MATERIALS)								

备注: 每圈滤盘的数量均为20块  
 Note: plate sector of each disc is 20 pcs.



## SECTOR FILTER CHAMBER / 扇形滤腔

扇形滤腔有分为两种，按其材质不同分为金属滤扇和非金属滤扇。金属滤扇主要用于料浆中颗粒细度大的场合。金属滤扇经过数控激光加工，使其透滤孔隙均匀，大密度的分布于金属表面，对过滤介质起到很好的支撑和辅助作用；非金属滤扇大都是由高屈服性能的塑料制成，通过增加其组分的化学元素改变塑料性能，再对其注塑模具成型。这种滤扇通过表面均匀无死角的斗式滤孔和其内部通道的设计提高滤液排除速率。

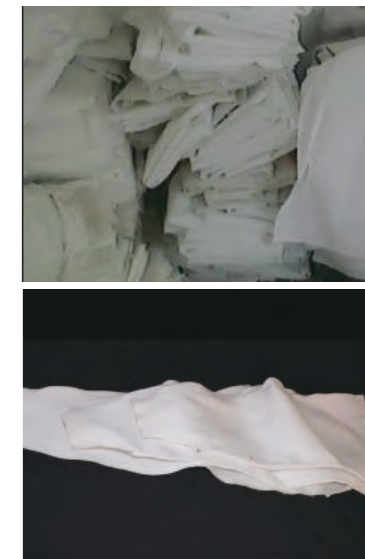
There are two types of sector filter chamber. It can be divided into metal filter sector and non-metal filter sector according to different materials. Metal filter sector is mainly used in the case where particles size of slurry is large. Metal filter sector is processed by NC laser to make uniform filtration holes with a high-density distribution on metal surface, which plays a good supporting and auxiliary role for filter media; Non-metal filter sector are mostly made of high yield strength plastics. By increasing plastic chemical elements to change plastic properties, then it is injection molded. This filter sector design increases filtrate discharge rate through uniform and full coverage bucket filter holes on sector surface and internal channels.



## FILTER CLOTH / 滤布

过滤布作为主要的过滤媒介，对过滤效果有着十分重要的影响。我公司派出从事过滤行业20余年的专家团队与滤布厂家合作，针对立盘式过滤机的行业应用开展大量的试验及数据搜集，最终成功开发了单复丝滤布，即单丝，复丝经纬向交错编织；这种滤布具有厚度薄，滤布孔隙均匀分布，优良的防阻塞性能，不仅过滤效果突出，而且卸饼流畅度和再生性能都非常优越。

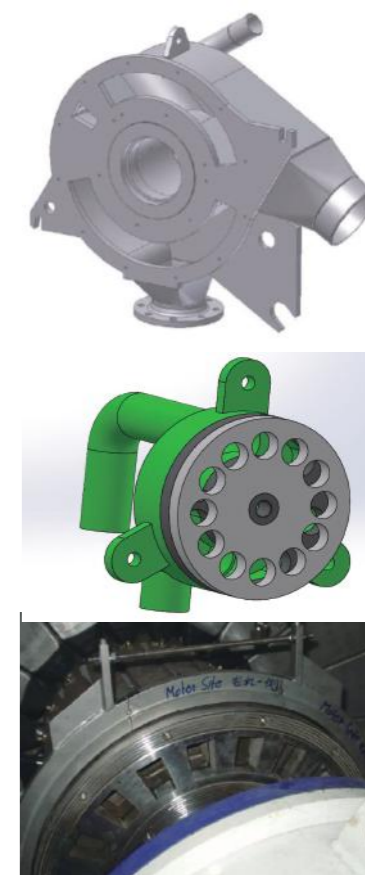
As the main filter media, filter cloth has a very important influence on filtration effect. Our company sent a team of experts engaged in filtration industry for more than 20 years to cooperate with filter cloth manufacturers. Too much tests and data collection were carried out for industrial application of vertical disc filter. Finally, monofilament multifilament filter cloth is developed. It means monofilament and multifilament warp and weft interlacing; This filter cloth is thin. It has uniform distribution of holes and excellent anti-block performance. Not only is filtration effect outstanding, but cake discharge fluency and reuse performance are excellent.



## DISTRIBUTION VALVE / 分配阀

分配阀是LPZ立盘式过滤机的主要过滤元件之一，分配阀的数量根据设备型号不同有单侧和双侧之分。分配阀一般由三部分组成，一是分区阀，它可将立盘表面积分成若干个区域，满足不同料浆处理上的工艺需求。二是过滤阀，过滤阀表面均匀分布若干圆孔，数量与单层立盘扇形滤扇的一致，是连接各个滤扇与过滤管道之间的通道。三是固定阀，固定阀首先在材质上与分区阀和过滤阀不同，一般是由金属制成，它是连接主轴与排液装置的过渡部件。分配阀整体由耐磨陶瓷和耐腐蚀金属构成。分配区域的划分对过滤效果好坏起着至关重要的作用。

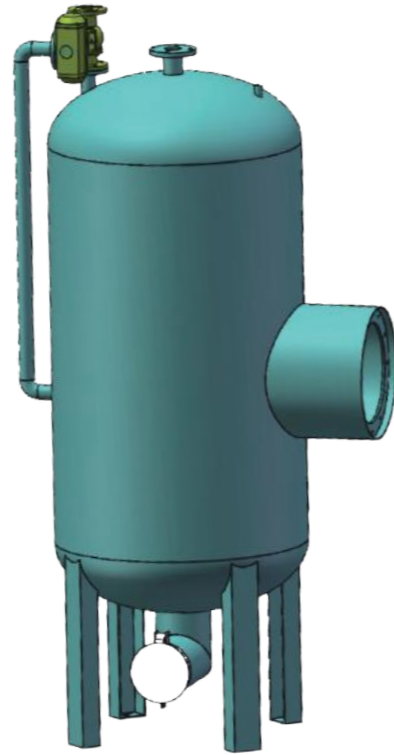
Distribution valve is one of the main filter elements of LPZ vertical disc filter. The number of distribution valves is divided into one side and two sides according to different types of equipment. It is generally composed of three parts. One is partition valve. It can divide the surface area of vertical discs into several areas to meet process needs for different slurry treatment. The second is filtration valve. Its surface is evenly distributed with some round holes. Number of holes is the same as filter sectors of single layer vertical disc. They are channels connecting each filter sector and filtration pipe. The third is fixed valve. It is different in material from partition valve and filtration valve. It is generally made of metal and is a transitional part that connects main spindle and filtrate discharge device. The whole distribution valve is made up of wear-resistant ceramic and corrosion-resistant metal. The division of distribution areas plays a crucial role in filtration effect.



**FILTRATE TANK / 排液罐**

LPZ立盘式过滤机排液方式有自动排液和辅助排液，通常的辅助排液有两个气缸组成，互锁电路控制和计数器来控制排液时间及液量。我公司采用简化连通管道方式，把电气互锁升级至液位液量控制，即一个阀门控制两个腔的液位。而且效果不受客观因素限制。

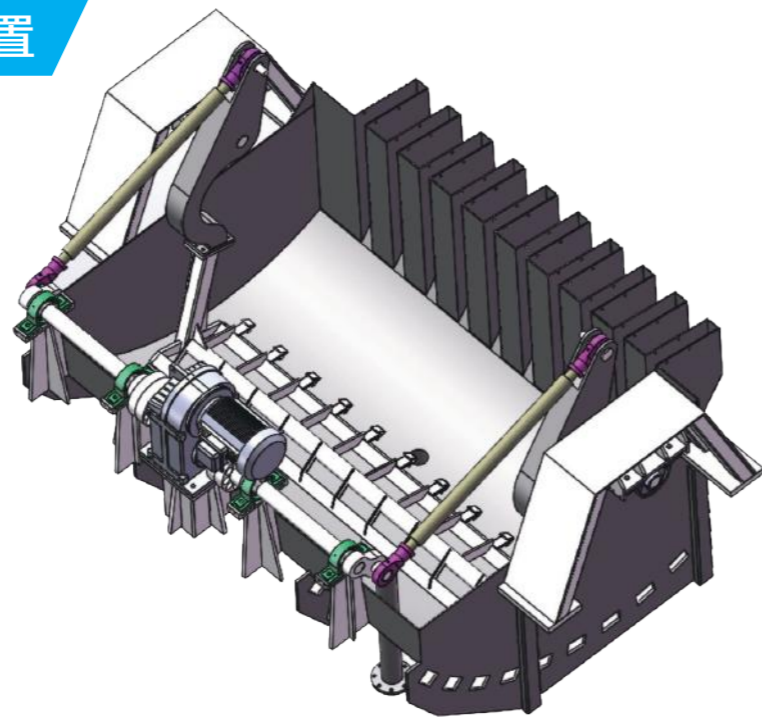
Filtrate discharge ways of LPZ vertical disc filter are automatic filtrate discharge and auxiliary filtrate discharge. The usual auxiliary filtrate discharge consists of two cylinders. Interlock circuit control and counter control filtrate discharge time and volume. Our company adopts simplified connecting pipeline way and upgrades electrical interlock to liquid level and volume control. That means one valve controls liquid level of two chambers, and effect is not limited by objective factors.



**AGITATION DEVICE / 搅拌装置**

摆架搅拌拓展了搅拌连杆的侧向面积而减小了与圆盘转动方向垂直面的面积，从而减少阻力，搅拌扒装有“箭”式破壁结构，可在料浆沉降速度较快的情况下，轻而易举的将料浆再次混合。搅拌扒可以实现无级调速。

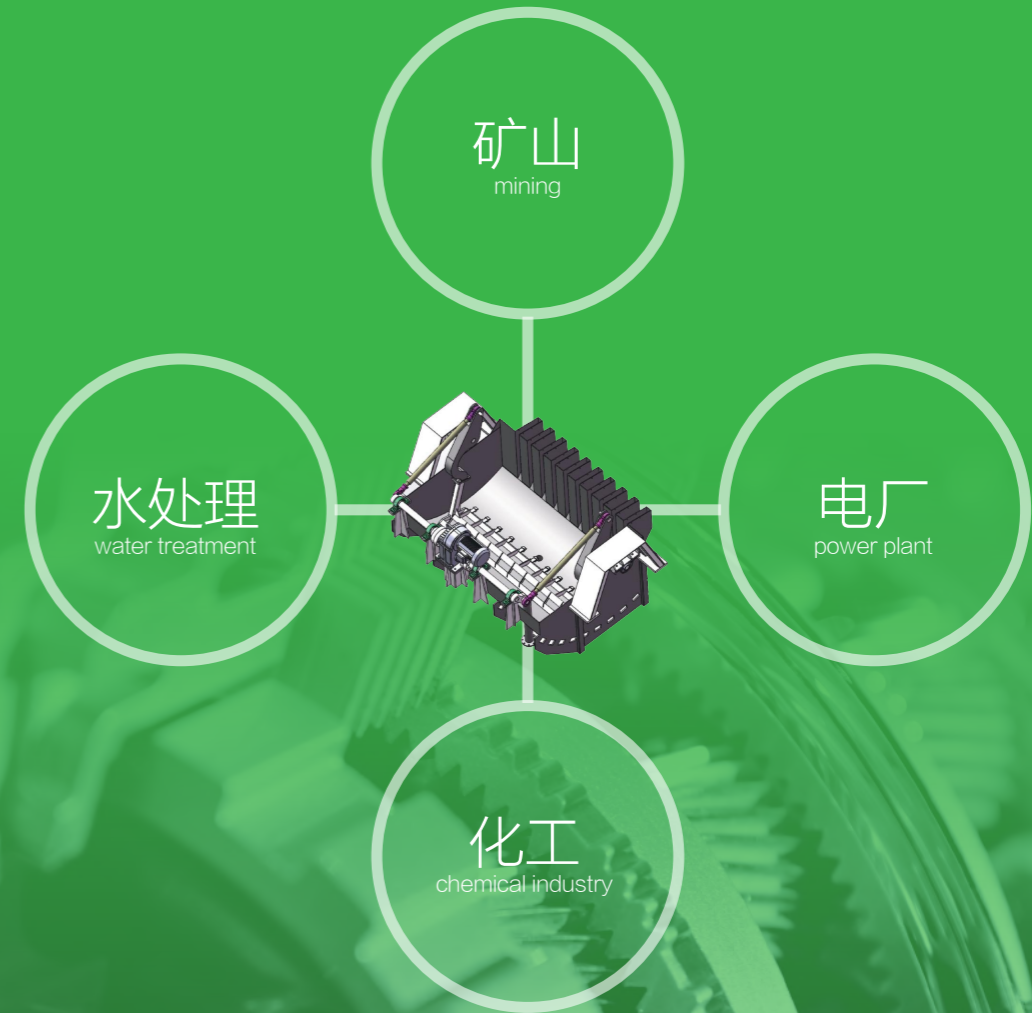
Swing frame agitation expands lateral area of agitating rod and reduces perpendicular area to disc rotation direction, which reduce resistance. Agitation rake is equipped with an "arrow" type structure. It can easily mix slurry again when sedimentation speed is fast. Agitation rake can realize stepless speed regulation.



**APPLICATION FIELDS / 设备应用范围**

LPZ立式圆盘过滤机主要应用在矿山，电厂，化工，水处理等行业，因其维护成本低，占地面积小，操作简单等优势被越来越多的企业场所选中，未来具备更换传统过滤设备的能力。

LPZ vacuum vertical disc filter is mainly used in mining, power plant, chemical industry, water treatment and other industries. Because of low maintenance cost, small footprint and simple operation, it has been selected by more and more companies and it will replace traditional filtration equipment in the future.



APPLICATION PARAMETER

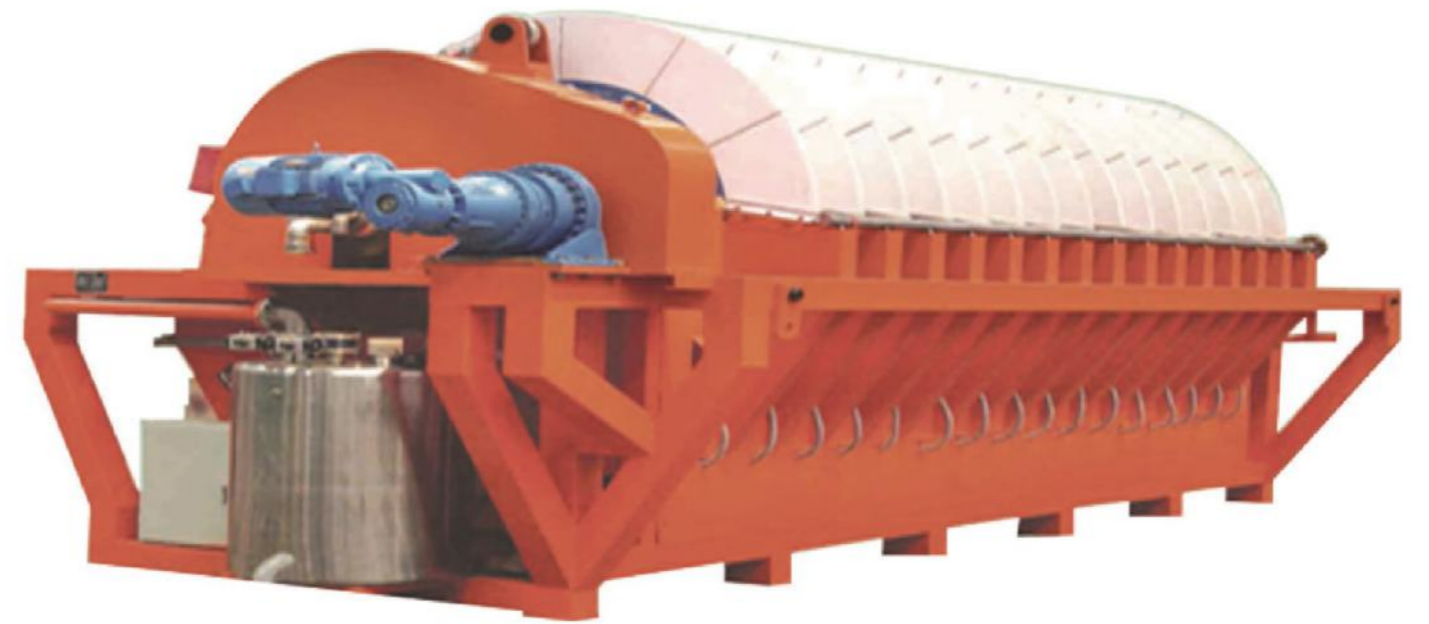
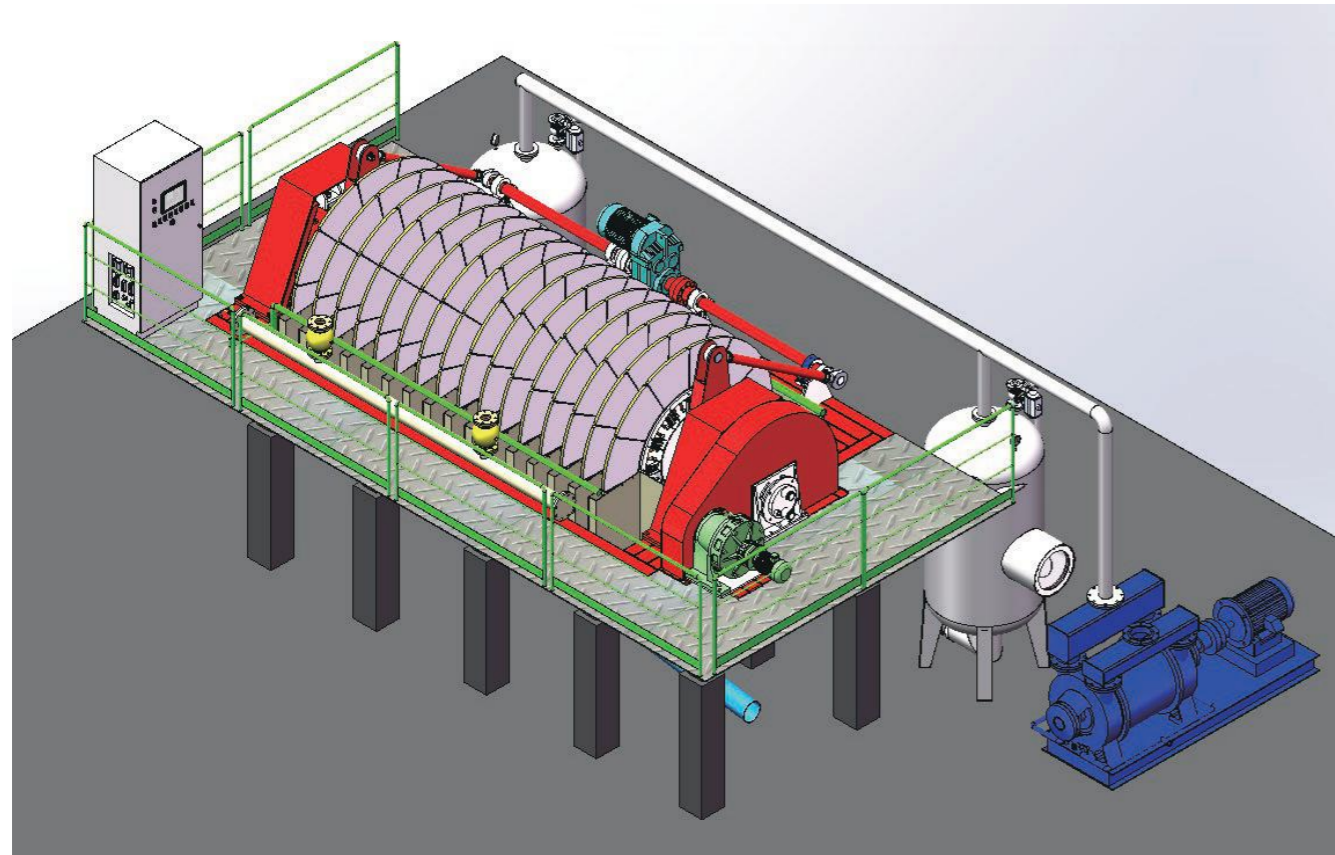
设备应用参数表

物料名称 Material	料浆浓度 (%) Slurry concentration (%)	滤饼水分 (%) Cake moisture (%)	处理能力 (kg/m <sup>2</sup> .h) Capacity (kg/m <sup>2</sup> .h)
金精矿 Gold concentrate	50-60	6.5-11.5	900-1500
铜精矿 Copper concentrate	45-60	13-16	400-600
铁精矿 Iron concentrate	40-60	6-10	850-1500
锌精矿 Zinc concentrate	50-60	6.2-12	750-900
铅精矿 Lead concentrate	50-65	10-12	650-800
铝土矿 Bauxite	50-60	10.5-12	350-450
铅锌尾矿 Lead and zinc tailings	50-65	12-16	350-550
氰化渣 Cyanide residue	50-65	21-24	350-750
镍精矿 Nickel concentrate	50-60	10-12	300-600
精煤 Clean coal	50-65	8-12	550-930
氧化锌 Zinc oxide	55-65	8-12	620-1200

APPLICATION SITES

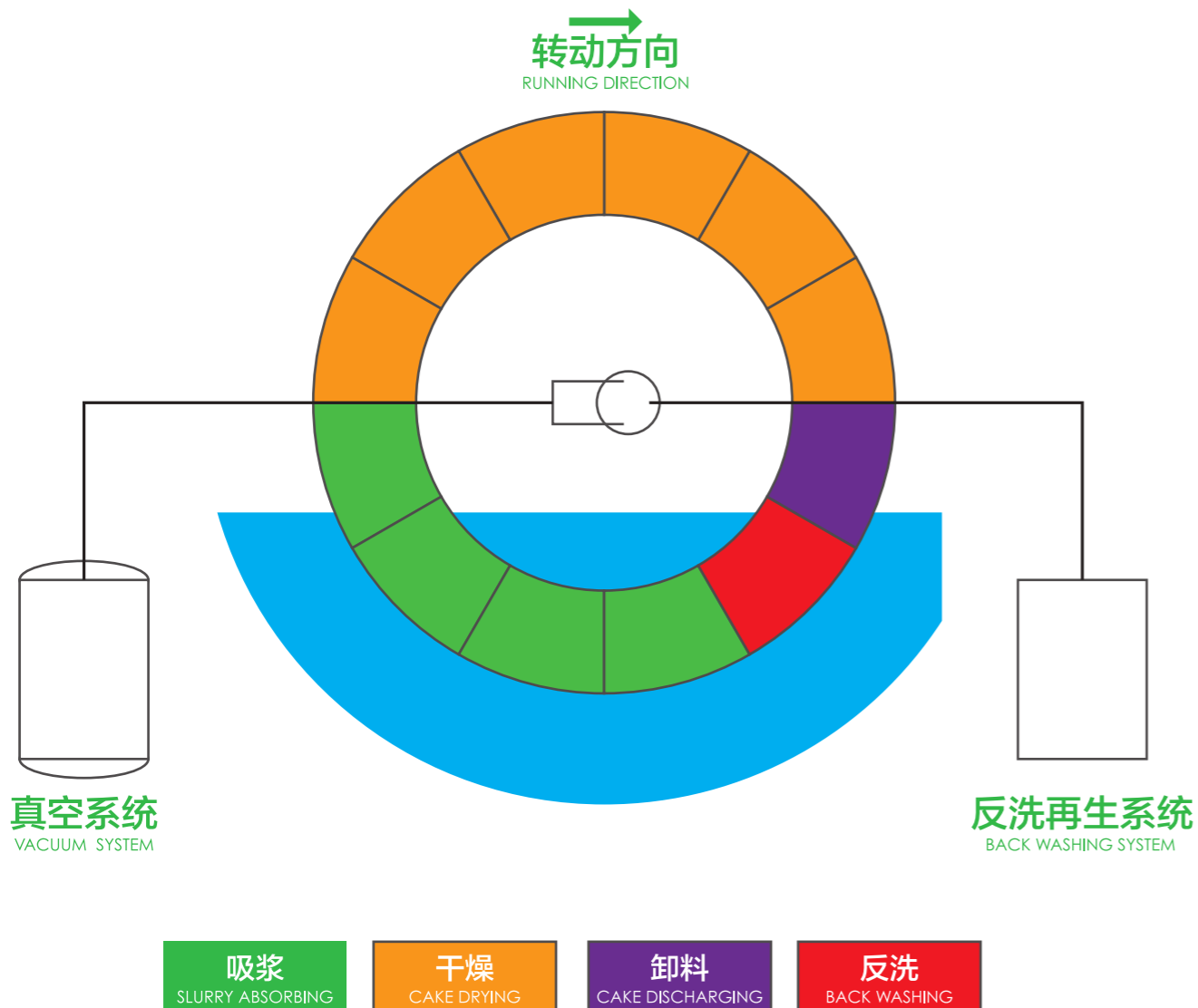
设备应用现场





- ◎ 陶瓷过滤机是一种以陶瓷过滤板为过滤介质，依靠真空负压和陶瓷过滤板的毛细作用实现固液分离的设备。
- ◎ 主要结构包括机架、料浆槽、主轴、陶瓷板、搅拌系统、真空排液系统、滤板再生系统和电气控制系统。

- ◎ The ceramic plate is a kind of equipment which uses ceramic filter plate as filter medium and relies on vacuum negative pressure and the capillarity of ceramic plate to realize solid-liquid separation.
- ◎ The main structure includes frameworks, slurry tank, main shaft, ceramic plate, stirring system, vacuum system, filter plate washing system and electrical control system.



## 吸浆 / SLURRY ABSORBING

- ◎ 浸没在料浆槽的滤板在真空负压的作用下，通过滤板毛细孔吸附，表面形成物料滤饼层；滤液从滤板内部通过管道到达排液罐后排出。
- ◎ The ceramic plate immersed in slurry tank, under the vacuum negative pressure, the material absorbed on the surface of plate by its capillary. The filtrate passes from the inside of the plate to pipes and filtrate tank to discharge out.

## 干燥 / CAKE DRYING

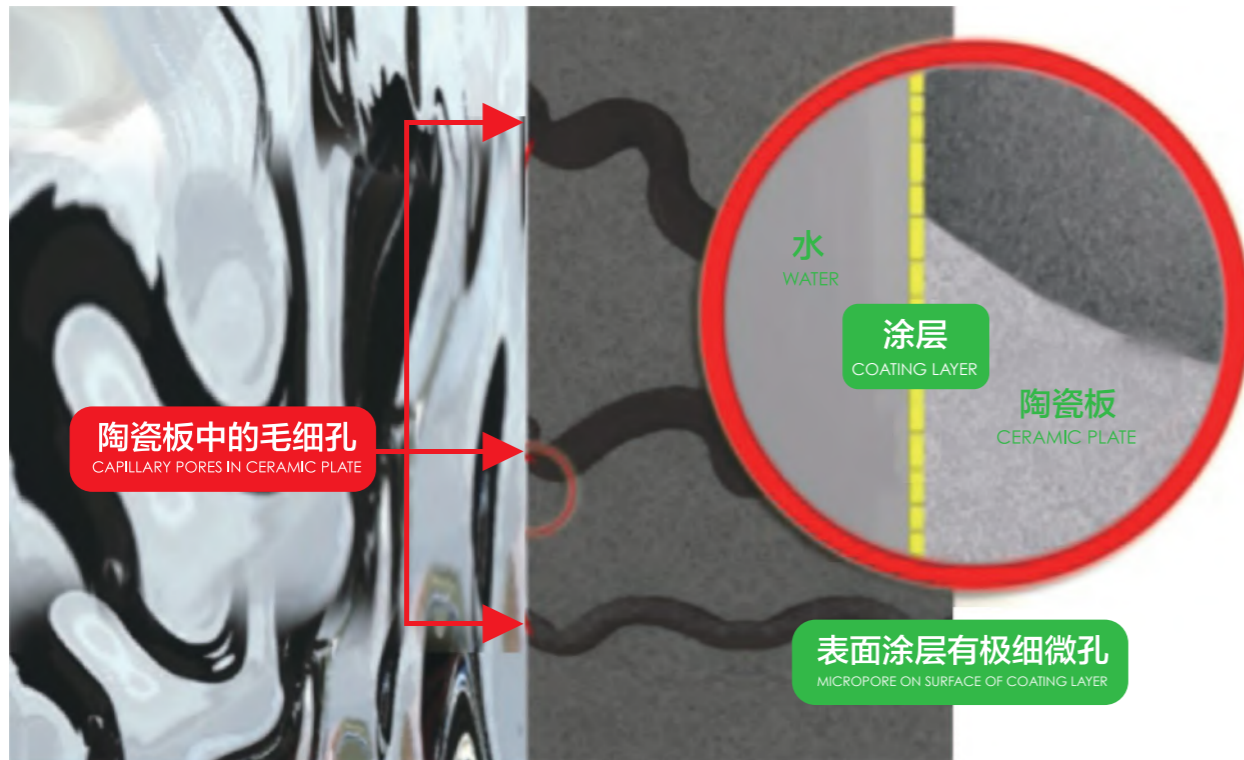
- ◎ 转子带动滤板和吸附在滤板上的滤饼转到干燥区，在真空的作用下滤饼继续脱水。滤饼干燥后，转子转动到卸料区（无真空），通过陶瓷刮刀卸料。
- ◎ The cake on the plates running by main roller to drying area, and continues drying under vacuum function. Then running to cake discharging area (without vacuum) to discharge the cake by ceramic scraper.

## 反洗 / BACK WASHING PLATE

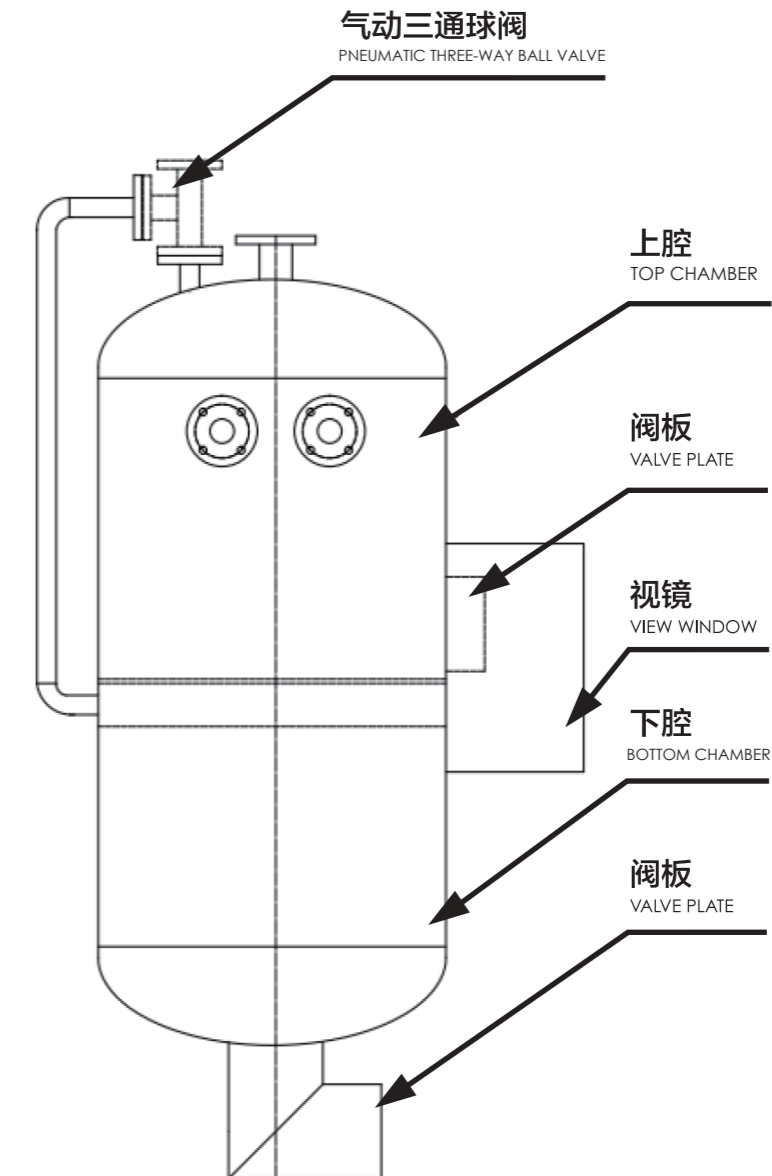
- ◎ 陶瓷板工作一段时间后，采用超声波配合低浓度酸的联合清洗，保证陶瓷板的持续高效使用。
- ◎ After cake discharging, the ceramic plate running to the back washing area, the process water or compressed air enters to the ceramic plate inside through the back washing pipes, to wash the ceramic plate holes from inside to outside.

## 超声波清洗 / ULTRASONIC WASHING PLATE

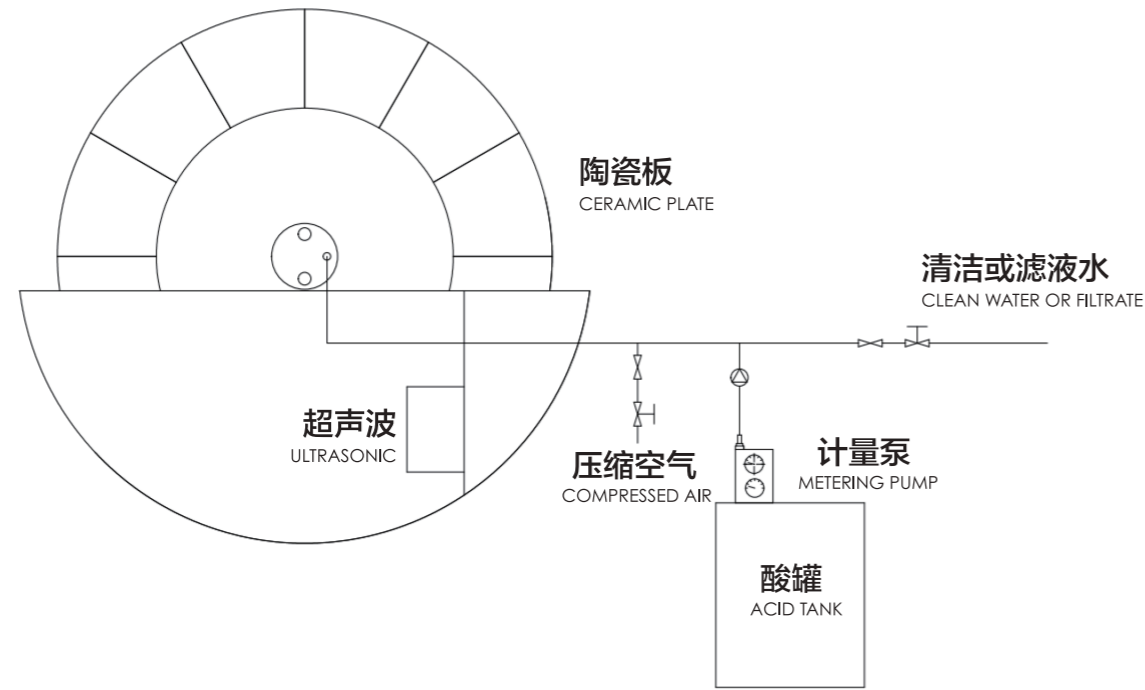
- ◎ 陶瓷板工作一段时间后，采用超声波配合低浓度酸的联合清洗，保证陶瓷板的持续高效使用。
- ◎ ULTRASONIC WASHING PLATE: After working for one shift, use ultrasonic waves combined with low concentration acid to wash the ceramic plate, this can ensure the high efficiency of the plate.



- ◎ 抽取陶瓷板内腔空气使之与外部产生压差，料浆槽内悬浮的固体物料在负压的作用下吸附在陶瓷板上，而液体因真空压差的作用以及陶瓷板的亲水性通过陶瓷板的表层进入陶瓷板内腔，这样就达到了固液分离的目的。
- ◎ 排液系统将陶瓷过滤板的滤液经连接管道进入排液罐，排液罐为上下腔结构并通过气动三通球阀连通，通过三通阀的连续切换实现滤液的自动排放。整个过程不需要泵辅助，减少了能耗和故障点。
- ◎ Extract air inside of the ceramic plate to make the pressure difference with external, under the negative pressure, the solids in the slurry tank will be absorbed on the ceramic plate surface, under negative pressure and the hydrophilicity of ceramic plate, the filtrate flow from the outside to inside of ceramic plate to reach solid-liquid separation.
- ◎ Filtrate discharge system makes filtrate in ceramic plate flow to filtrate tank through connecting pipes. Filtrate tank has top and bottom chambers, they are connected by pneumatic three-way ball valve, use continuous switching of three-way ball valve to reach discharging filtrate automatically. This whole process does not need pump assistance to reducing energy consumption and fault point.



- ◎ 陶瓷板再生系统是利用水或气由内向外清洗陶瓷板。再生系统分为两个部分，设备正常过滤时采用气水混合反冲洗，在反洗水中加入适量压缩空气，可以提高反冲洗的效果，同时减少用水量，最大限度的保持料浆槽内的物料浓度，增加产品产量；在设备清洗时采用低浓度酸配合超声波清洗堵塞在陶瓷板内部的细小颗粒，达到陶瓷板再生的目的。
- ◎ Ceramic plate washing system uses water or compressed air to wash ceramic plates from the inside to the outside. The washing system is divided into two parts. During the equipment normally filtering, use compressed air and water together to wash the plates. Adding an appropriate volume of compressed air into back washing water can improve back washing effect and reduce water consumption, to maximum ensure the slurry concentration and increase the capacity. During equipment washing process, use low-concentration acid and ultrasonic washing together to wash the fine solids from the plate inside.



- ◎ 控制系统采用PLC和触摸屏实现全自动化控制和实时监控，并可实现远程操作。
- ◎ Control system uses PLC and touch screen for full automation control, real-time monitoring and remote operation.

型号面积 (m <sup>2</sup> ) model & area (m <sup>2</sup> )	滤盘圈数 filter disc/cycle	滤板数量 (块) plate Qty (pcs)	装机功率 (kw) Installed Power (kw)	运行功率 (kw) Operating power (kw)	主机 (m) Main body (L×W×H) (m)
CF-1	1	12	3.5	2	1.6×1.4×1.5
CF-6	2	24	7	6	2.4×2.9×2.5
CF-15	5	60	11.5	8	3.3×3.0×2.5
CF-30	10	120	17.5	11.5	5.5×3.0×2.6
CF-48	12	144	34	24	5.7×3.1×3.0
CF-60	12	144	45	33	6.0×3.3×3.1
CF-80	16	192	63	47	7.3×3.3×3.1
CF-120	20	240	77	57	8.5×3.7×3.3
CF-144	12	144	77	57	8.5×3.7×3.3

EQUIPMENT FEATURES / 设备特点

- ◎ 能耗低，运行成本低（真空损耗小），滤饼水分低，过滤液含固量低，可直接排放回反复利用。自动化程度高，结构紧凑，占地小，安装维护方便。
- ◎ 目前已广泛应用于矿山、黑色金属、有色金属、稀有金属、非金属等精矿及尾矿脱水，及环保污水污泥废酸处理等。
- ◎ Low power consumption, low operation cost (low vacuum loss), low cake moisture, low solids content in filtrate and can be reused. High automation, compact structure, small space occupied, and easy installation and maintenance.
- ◎ It is widely used in concentrate and tailings dewatering of mining, ferrous metals, non-ferrous metals, rare metals, non-metallic and environmental protection sewage sludge dewatering and waste acid treatment, etc.

CAPACITY / 产能

矿种 Commodity	粒径分布 Size Distribution	给料浓度(%) Feed Density (%)	处理量 (kg/mh) Capacity (kg/mh)	滤饼水分(%) Moisture (%)
金精矿 Gold ore concentrate	-200~-325目	50~60	900~1500	6.5~11.5
金尾矿 Gold tails	-200~-400目	45~60	400~600	13~16
铜精矿 Copper concentrate	-200~-325目	45~60	600~900	6.5~12
铁精矿 Iron ore concentrate	-200~-325目	40~60	850~1500	6~10
锌精矿 Zink concentrate	-200~-325目	50~60	750~900	6.5~12
铅精矿 Lead concentrate	-200~-400目	50~65	650~800	10~12
铝土矿 Bauzite	-200~-325目	50~60	350~450	10.5~12
铅锌尾矿 Tritochorite tails	-200~-325目	50~65	350~550	12~16
氰化渣 Cyanidated slags	-200~-400目	50~60	350~750	21~24
硫精矿 Sulfur ore concentrate	-200目占80%	50~65	350~790	8~12
镍精矿 Nickel concentrate	-200~-325目	50~60	300~600	10~12
精煤 Cleaned coal	-200目占80%	50~65	550~930	18~20
氧化锌 Zinc oxide	-200目占75%	55~65	620~1200	8~12
萤石粉 Derbyshire spar	-200目占60%	55~65	750~900	8~12

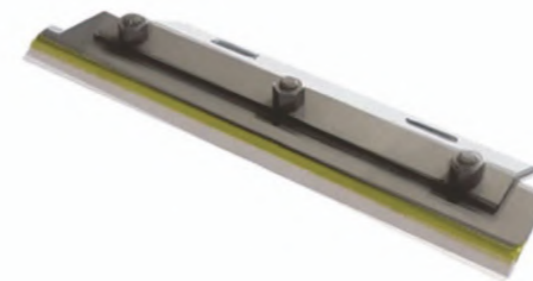
MAIN PARTS / 主要备件



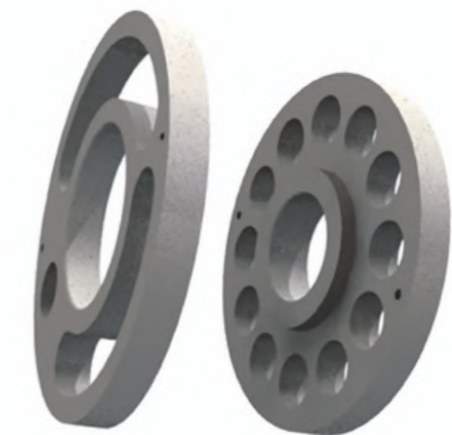
陶瓷板  
CERAMIC PLATE



箍断阀  
PINCH-OFF VALVE



陶瓷刮刀  
CERAMIC SCRAPER



分配阀  
DISTRIBUTION VALVE



APPLICATION PICTURES / 现场图片



铁精粉  
IRON ORE CONCENTRATE



铅锌矿  
LEAD ZINC MINE



磷精矿  
PHOSPHATE CONCENTRATE



钾长石  
POTASH FELDSPAR

EQUIPMENT DELIVERY / 设备发货

