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JIANGSU NEW HONGDA GROUP



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江苏宏润压滤机有限公司

Jiangsu Hongrun Press Filter Co., Ltd.

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有多少关注, 就有多少期望.....
There will be expectation as much as attentions there will be

百尺竿头, 更进一步 *Further Development Greater Success*

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Dedicated to developing most effective industry

致力于汇聚最为优秀的人才
Dedicated to recruit the best talents

致力于创造最可靠的设备
Dedicated to creating the reliable equipment

致力于提供最为精良的产品
Dedicated to supplying the excellent products

最严格的选材
The strictest material selection

最先进的设备
The most advanced equipment

最科学的检测手段, 最专业的人员
The most scientific testing method,
The most professional technician

追求“第一时间零缺陷”目标
Pursuit the goal of “Zero Defect immediately”

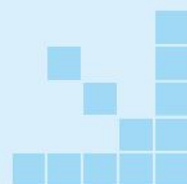




超越自我, 永不满足
Go beyond the self and never satisfy

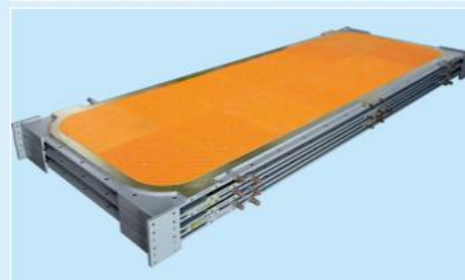
追求人与技术的结合
Pursuit combination of people and technology

保障产品的质量可靠性
Guarantee the reliability of the product quality



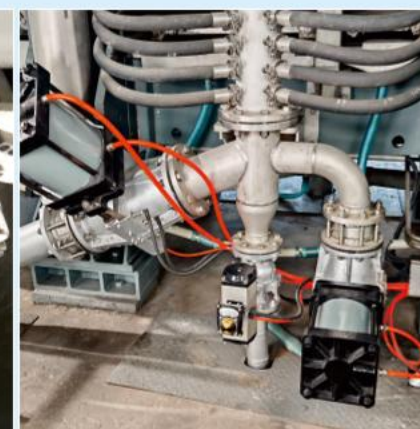
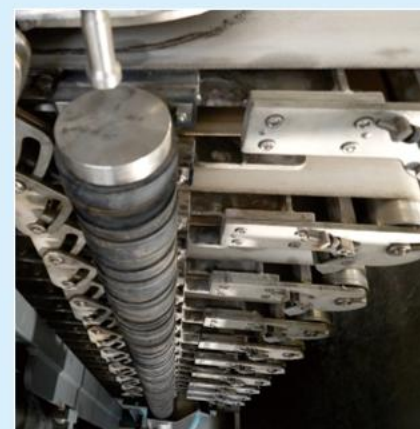
先进设备
The Advanced Equipment

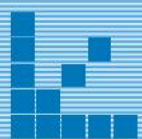
缔造卓越的品质
Create excellent quality



打造一流的产品, 只拥有先进的生产设备是不够的, 还需要孜孜不倦追求完美的精神和一流的检测设备。宏润从研发到检测层层把关, 力求完美、精益求精。

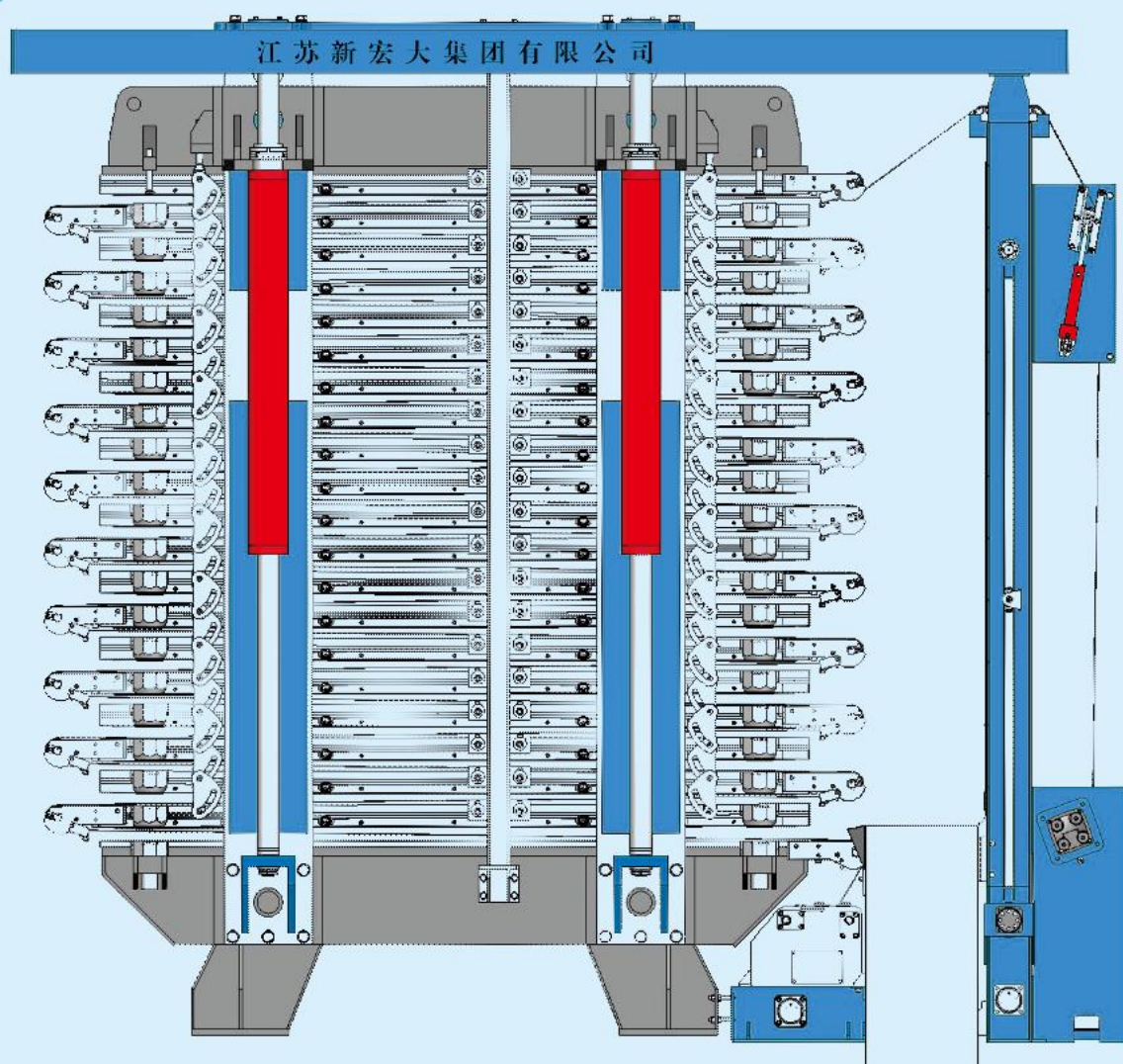
To produce the first-class products, not only the advanced manufacturing equipment is needed, but also the spirit of tireless pursuit of perfection and advanced testing equipment are need. Hongrun controls and checks at each level from research to testing, to keep improving and strive for perfection.





立式全自动压滤机

Vertical Automatic Press Filter



1

立式全自动压滤机简介

Introduction of Vertical Automatic Press Filter

HDLY系列立式全自动压滤机是我公司在吸收、消化国外压滤机最新技术的基础上自行开发和研制的，该机的适用范围较广，主要应用于有色、冶金、化工、选煤、食品、陶瓷、造纸、制糖、染料、污水处理等行业对物料洗涤、过滤、脱水，使悬浮液中的固液两相分离。

1. HDLY系列立式全自动压滤机与板框式压滤机相比具有以下特点：

- 1) 生产能力大，自动化程度高。过滤、挤压、洗涤、二次挤压、风干、卸饼六个程序全部采用全自动控制，连续工作，同面积产能是板框式的6倍以上。
- 2) 滤饼含水率低，由于最大挤压压力达到1.6MPa，再经压缩空气风干，可得到水分很低的滤饼，在不考虑介质结晶水的情况下含水率<10%，甚至可取消传统的干燥工序，节省大量的能源。
- 3) 增加了洗涤工序，洗涤效果好，滤布正反面可交替过滤，有自洁再生性能。滤布为水平放置，滤饼厚度均匀，滤饼厚度可达45mm。
- 4) 结构紧凑。由于是四柱立式装置，设备占地面积小，在改造时可对厂房不投资或投资很小。
- 5) 设备运行通过控制柜实行全自动控制，具有自诊断和自动报警功能。

HDLY Automatic Vertical Press Filter is developed by NHD on basis of assimilating technology of press filters domestic and abroad with wide applications in non-ferrous, smelting, chemical, coal beneficiation, food, porcelain, paper, sugar, dye, waste water treatment by washing, filtering, dewatering to separate solid from liquid.

1. Features compared with Frame Filter Press:

- 1) Large capacity, high automatization; 6 processes filtering, squeezing, washing, 2nd squeezing, drying and discharging are all control automatically and continuously, which is 6 times capacity of frame filter press with same areas.
- 2) Low water content in cake. Since the pressure can reach 1.6Mpa and the cake dry by air, the low water content cake can be made. The water content can reach less than 10% without considering crystal water, and even the traditional dry process can be canceled to save energy.
- 3) Washing process is added with good effect. Cloth can be used for filtering with top and back surface alternating and have a high recovery ability. Cake is uniform with thickness 45 mm at maximum.
- 4) Compact structure. Since it is of 4 vertical column structure with less area. Less or no invest is needed during revamping.
- 5) The equipment is controlled by panel automatically with self-diagnosis and alarm system.

2. 压滤机型号：

2. Press filter model

压滤机型号标记：

Model mark:

HDLY / II - □

压滤机面积m² filter area

滤板型号： I=1.5m²
Filter plate model II=3m²
III=6m²

立式全自动压滤机
Vertical automatic press filter

全自动压滤机是在箱式压滤机的挤压原理上进一步发展的，主要过滤工作阶段包括进料、隔膜挤压、滤饼洗涤和空气风干。
Filter is developed further on squeeze principle of frame filter press.Its main processes containfeed-in,Diaphragm Squeeze,washing and air drying.

2

根据过程分为

The press filter can be divided into 2 types according to processes

- A.短程序 Short Processes
- 无滤饼洗涤的工作程序（四阶段：过滤、挤压、干燥、卸饼）
There are 4 processes(filtering,squeeze,drying,discharging)without washing.
- B.完全程序 Completed Processes
- 带滤饼洗涤的工作程序（六阶段：过滤、挤压、洗涤、挤压I、干燥、卸饼）
There are 6 Processes(filtering,squeeze1,washing,squeeze2,drying,discharging).

3

技术说明

Technical description

型 号 Model	过滤面积 Filter Area (m ²)	外形尺寸 Dimension m (长L×宽W×高H)	滤框数量 (块) Plate Qty.	最大挤压力 (MPa) Max Pressure
HDLY/ I - 6	6	4.3×3.9×2.2	4	1.6
HDLY/ I - 9	9	4.3×3.9×2.4	6	
HDLY/ I - 12	12	4.3×3.9×2.6	8	
HDLY/ I - 15	15	4.3×3.9×2.9	10	
HDLY/ I - 18	18	4.3×3.9×3.1	12	
HDLY/ I - 21	21	4.3×3.9×3.4	14	
HDLY/ I - 24	24	4.3×3.9×3.6	16	
HDLY/ I - 27	27	4.3×3.9×3.9	18	
HDLY/ I - 30	30	4.3×3.9×4.1	20	
HDLY/ II - 24	24	5.6×4.4×2.8	8	1.6
HDLY/ II - 30	30	5.6×4.4×3.0	10	
HDLY/ II - 36	36	5.6×4.4×3.3	12	
HDLY/ II - 42	42	5.6×4.4×3.5	14	
HDLY/ II - 48	48	5.6×4.4×3.8	16	
HDLY/ II - 54	54	5.6×4.4×4.0	18	
HDLY/ II - 60	60	5.6×4.4×4.3	20	
HDLY/ II - 66	66	5.6×4.4×4.5	22	
HDLY/ II - 72	72	5.6×4.4×4.8	24	
HDLY/ III - 60	60	7.2×5.2×3.5	10	1.6
HDLY/ III - 72	72	7.2×5.2×3.7	12	
HDLY/ III - 84	84	7.2×5.2×4.0	14	
HDLY/ III - 96	96	7.2×5.2×4.2	16	
HDLY/ III - 108	108	7.2×5.2×4.5	18	
HDLY/ III - 120	120	7.2×5.2×4.7	20	
HDLY/ III - 132	132	7.2×5.2×5.0	22	
HDLY/ III - 144	144	7.2×5.2×5.3	24	
HDLY/ III - 156	156	7.2×5.2×5.5	26	
HDLY/ III - 168	168	7.2×5.2×5.8	28	
HDLY/ III - 180	180	7.2×5.2×6.0	30	

4

压滤机工作原理

Work principle

HDLY压滤机是有效地将固液分离的自动压滤机。它运行主要包括以下四个阶段：过滤、隔膜挤压、滤饼洗涤、空气风干。

HDLY压滤机的滤板在两个压力板框中水平放置，过滤时滤板组件挤压在一起，滤饼排放时打开。

滤板组件主要由液压缸打开和关闭。
滤布在板框间穿行，滤饼可在滤布两边形成。滤布自动反洗，粘附在滤布上或堵塞在滤布中的上一个循环残留的固体颗粒，在滤布另一面进行过滤时反洗出来。

每个过滤循环结束时，滤布向前驱动带出滤饼。滤饼排出后，新的循环开始。滤布运行时将滤饼从压滤机上卸下，同时用高压水从两边清洗。滤布由液压马达驱动。滤布张紧装置在板框组件打开和关闭时运行。

料浆从分配管道进入密封的滤腔。洗涤水和压缩空气经同样的管路进入。进料阶段结束后，使用排空阀将分配管排空。分配管位于压滤机进料口一边（进料口在驱动装置左侧）。

高压水由一个多级离心泵抽送至位于隔膜上方的分配管。挤压阶段结束后，水由同样管路返回高压水站。

压滤机的运行由控制柜全自动控制，控制柜配有显示屏、操作者界面、开关和操作按钮，便于调节和观察过滤循环过程。

HDLY press filter can separate solid form liquid efficiently and automatically; its main four steps are feed-in, diaphragm squeeze, cake washing and air drying.

Filter plate is designed between 2 frames horizontally. All parts of plate assembly are pressed together during filtering and then opened for cake discharging.

Filter Plate assembly is closed and opened by hydraulic cylinder.

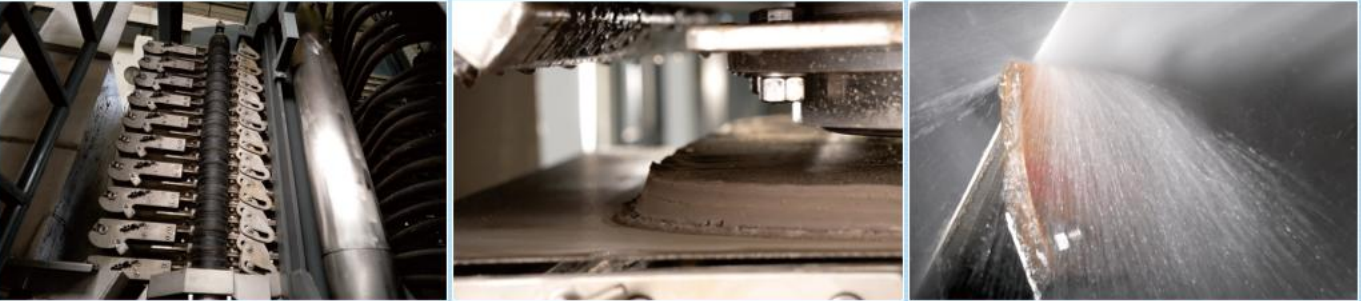
Filter cloth runs between frames,and cakes can form on either side of cloth. The cloth is counter washed automatically. When the other surface of cloth is under filtering, the residual solid particles from last cycle will be counter washed out.

After one cycle finish,the cloth is driven forward to carry out cake.After cake is discharged,a new cycle begins.The run of cloth will discharge cake from filter,and meanwhile wash with high pressure water from two ends. Filter cloth is driven by hydraulic motor. The tension device of cloth works when frame assembly opens or closes.

Slurry enters filter chamber through manifold pipe. Washing water and compressed air enter through the same pipeline. After feeding,blow off valve is used to drain all from manifold pipe.The manifold pipe is located on the inlet side.(Inlet is on the left side of drive unit).

The high pressure water is pumped by a multistage centrifugal pump to the distribution pipes on the top of diaphragm.When squeezing stage finish,water returns the high pressure station through the same pipeline.

The operation of filter press is automatically controlled by control panel. There are display, operator interface, switch and operating buttons on control panel, which is easy to regulate and watch the circulating processes.



5.1 过滤阶段

当过滤板框关闭后，料浆同时通过料浆管进入每个滤腔。滤液通过滤布进入滤液腔，然后进入滤液软管，最后到达滤液总管排出。

5.2 一次挤压

高压水通过高压水软管进入隔膜上方，隔膜向滤布表面挤压滤饼，从而将滤液挤出滤饼。

5.3 洗涤（可选阶段）

洗涤液使用同料浆相同的管道被泵送到过滤腔；由于液体注满滤腔，隔膜被抬起，隔膜上方的高压水被挤出。洗涤液在通过滤饼和滤布后流入排放管。

5.4 二次挤压（可选阶段）

在洗涤阶段之后留在滤腔里的洗涤液用上述第二阶段中的方法被挤压出去。

5.5 空气干燥

滤饼最后干燥是由压缩空气完成的。通过分配管进入的空气充满了过滤腔，顶起隔膜，使隔膜上的高压水排出压滤机。通过滤饼的气流减少滤饼的水分含量到最佳程度，同时排空滤液腔。

5.6 滤饼排放

当干燥过程完成后，板框组件打开，滤布驱动机构开始运行，滤布上的滤饼从压滤机两边排出。

无滤饼洗涤程序（短程序）不包括洗涤和二次挤压阶段。

5.1 Filtering Process

When frame assemblies close, slurry goes through pipe to each filter chamber. Filtrate penetrate cloth to the filtrate chamber, then reach the filtrate flexible tube, and finally the filtrate is drained out by filtrate header.

5.2 First Squeeze

The high pressure water is pumped to diaphragm top through flexible pipe, to squeeze the diaphragm. Then the cake forms between diaphragm and cloth, and the filtrate is squeezed out of cake.

5.3 Washing(Optional)

Wash liquid is pumped to filter chamber through the same manifold pipe of slurry. Since the washing liquid fill the chamber fully and the diaphragm is lifted to extrude the high pressure water on top of diaphragm. Wash liquid flows to discharge pipe by passing filter cake and filter cloth.

5.4 Second Squeeze

After washing, some left wash liquid in chamber has to be extruded out by the same way as first squeeze.

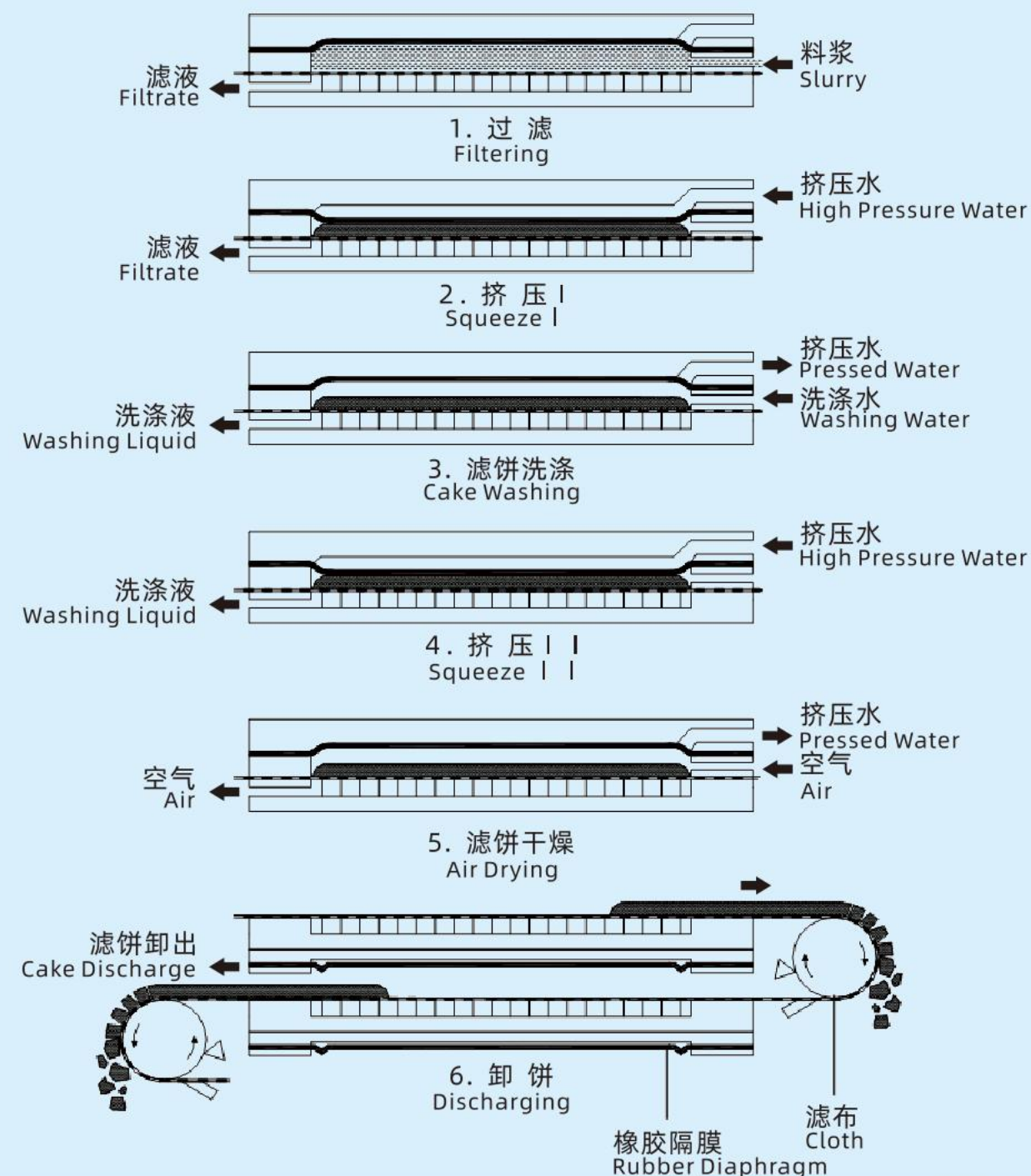
5.5 Air Drying

Filter cake, is dried by compressed air. Air goes to filter chamber through manifold pipe, Diaphragm is pressed to drain water out of filter press. Air through cake can reduce moisture content to best degree, and also empty the filtrate chamber.

5.6 Cake Discharge

After dry process is completed, frame assemblies open, and cloth drive units start running. The filter cake on cloth will be discharged from the both ends of filter.

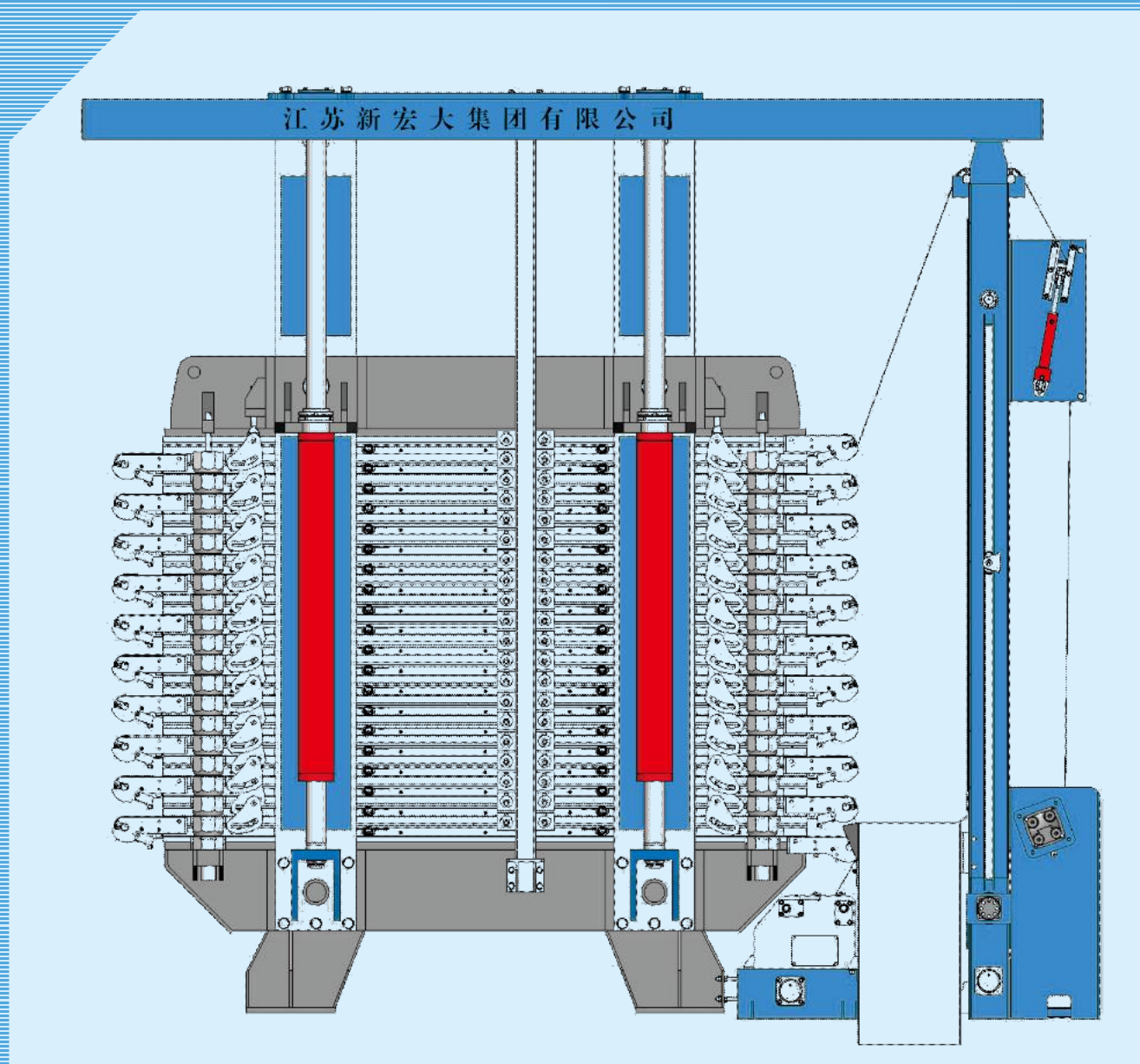
4 No cake washing procedure (short processes) do not include washing and 2nd squeeze.



7

滤板关闭状态图

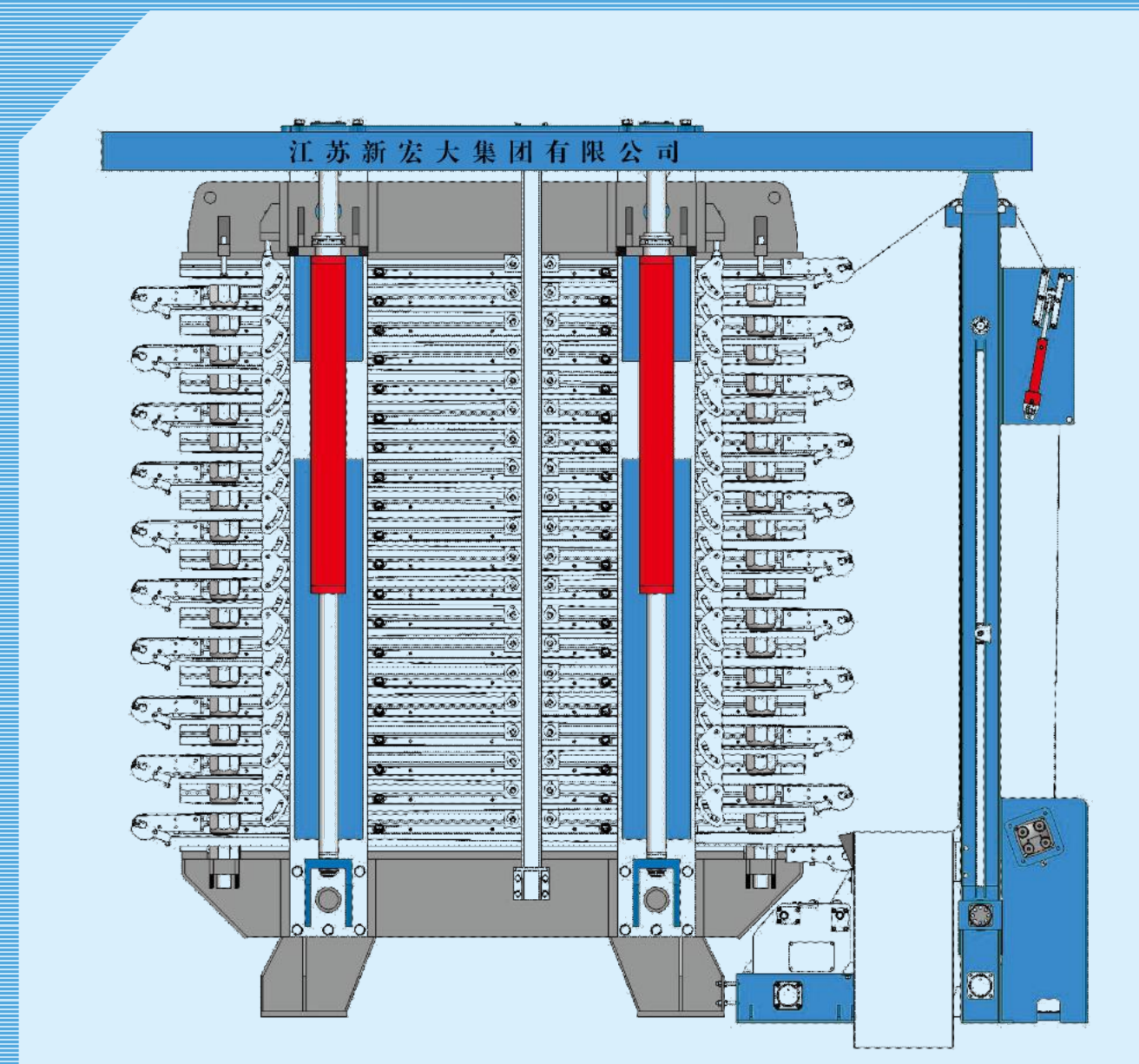
Figure for frame assembly close



8

滤板打开状态图

Figure for frame assembly open





瑞木镍钴管理（中冶）有限公司
（巴布亚新几内亚）（湿法镍钴冶炼）
Ramu NiCoManagement (MCC) Limited
(Papua New Guinea) (Ni-Co Hydrometallurgy)



华越镍钴印尼有限公司
（华友印尼项目）（湿法镍钴冶炼）
Huayue NiCo Limited (Huayou Indonesian Project)
(Ni-Co Hydrometallurgy)



宁波力勤矿业有限公司（印尼）项目
（湿法镍钴冶炼）
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(Ni-Co Hydrometallurgy)



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Sanmenxia Jinghua New Material Co.,Ltd
(Acid-insoluble residue)



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Wenfu Zijin Chemical Co.,Ltd
(Gypsum, Phosphoric Acid Residue)



瓮福化工有限公司
（磷石膏）
Wenfu Chemical Co.,Ltd
(Gypsum)



云南祥云飞龙股份有限公司（湿法铅）
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(Hydrometallurgy of Lead)



青海锂业有限公司（碳酸锂）
Qinghai Lithium Industry Co.,Ltd
(lithium carbonate)



达州市正宏储能材料科技有限公司（磷酸铁）
Dazhou Zhenghong Energy Storage
Materials Technology Co.,Ltd (Iron Phosphate)



贵阳开磷化肥有限公司（萃余酸）
Guiyang Kailin Fertilizer Co.,Ltd (Residual acid)



云南云天化三环化工有限公司（磷酸一铵）
Yunnan YTH Three Circle Chemical Co.,Ltd (MAP)



中色迪兹瓦矿业有限公司
（刚果（金））（湿法铜钴冶炼）
CNMC SOMIDEZ (DRC) (Cu Hydrometallurgy)



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Hebei Iron & Steel Co.,Ltd Chengde Branch
(Vanadium Smelting)



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Jiangxi Jinhuan Pigment Co.,Ltd (Pigments)



内蒙古泰兴泰丰化工有限公司（染料）
Inner Mongolia Taixing Taifeng Chemical Co.,Ltd
(Dyes)



紫金矿业塞尔维亚铜业有限公司
（湿法铜冶炼）
Zijin Mining Co.,Ltd Serbia (Cu Hydrometallurgy)



开曼铝业（三门峡）有限公司（超细氧化铝）
Kaiman Aluminum (Sanmenxia) Co.,Ltd
(Super Fine Alumina)



河北文丰新材料有限公司
（氧化铝公司）（草酸盐）
Hebei Wenfeng New Material Co.,Ltd
(Alumina) (Oxalate)



瓮福蓝天氟化工有限公司（氟化工）
Wenfu Lantian Fluorine Chemical Co.,Ltd
(Fluorine)



河南漯河兴茂钛业有限公司（氯化法钛白粉）
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(Chlorination process)



中国平煤神马集团联合盐化有限公司（盐泥）
China Pingmei Shenma Group
United Salt Chemical Co.,Ltd (Salt Sludge)