

## 目录 Contents

# 兰美拉 (Lamella) 沉淀器篇

气浮篇 DAF	5~16
• 关于气浮	DAF introduction
• DAF-标准型	DAF -Standard DAF
• DAF2 -标准沉淀型	DAF2 -Standard Sedimentation DAF
• SDAF -高密度沉淀型	SDAF -High Efficiency Sedimentation DAF
• IDAF/IDAF2-一体型	IDAF/IDAF2 -Integrated DAF
<b>兰美拉 (Lamella) 沉淀器篇</b>	<b>18~22</b>
<b>Lamella Clarifier</b>	
• LST1-锥型	LST1-Corn Shape Bottom
• LST2-机械型	LST2-Bottom With Sludge Scraper
周边配套设施篇	24~28
Supporting Equipment	
• MFR机械型	MFR-Machinical Chemical Reaction
• PFR管式型	PFR-Pipe Flocculator
• PM 静态/管道型	PM-Static Mixer
• PAM全自动泡药机	PL3-Automatic Polymer Preparation Device
• SJY单槽型	SJY-Single Tank Chemical Dosing device
• DJY双槽型	DJY-Double Tanks Chemical Dosing device
• HS 水力栅	HS-Static Screen
ZXG型中心传动悬挂式刮泥机	28~29
ZXG-Centre Drive Sludge Scraper	
其他设备	30
Other Equipments	



# 关于兰美拉沉淀器

## LAMELLA CLARIFIER INTRODUCTION



## 应用领域

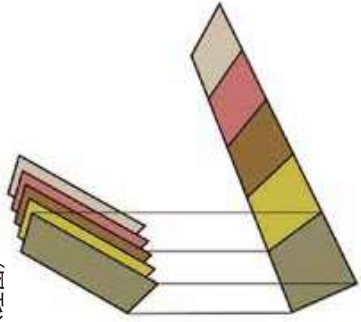
- 电子类废水 Electronic wastewater
- 电镀类废水 Electroplating wastewater
- 造纸废水 Paper mill wastewater
- 过滤器前及过滤反洗水处理
- Backwash water treatment before for filter
- 废水处理厂深度处理 Enhancement treatment for WWTP
- 河水净化 River water purification

## 工艺原理及理论

Lamella沉淀器是通过在沉淀分离区内设置若干数量薄板，单位占地面积上获得成倍有效沉淀面积的高效固液分离装置。

兰美拉沉淀系统基于德国哈真 (Hazen) 教授 20 世纪初提出的“浅池理论”。其核心是提出沉淀能力与沉淀池面积有关，与沉淀深度无关。

Lamella 沉淀面积为斜板投影面积累加 (如下原理图)



Lamella Clarifier system is based on the "shallow tank theory" of German Hazen professor put forward by the early 20th century. Core theory is : sedimentation performance depends on effective settling area, nothing to do with sedimentation depth. Lamella clarifier system settling area is inclined plate projection area accumulation



## 产品优势

- 1、高效、占地少：斜板加长至1.5m，分离效率提高，较常规斜板（斜管）效率高1.5~2.0倍，与常规幅流式及竖流式沉淀器比较，可节省80%的占地面积。
- 2、良好的水力条件：无水力死角及漩渦，沉淀效果更佳。
- 3、斜板不堵塞：斜板倾角60度，板间距80~100mm，设有反洗装置。
- 4、坚固耐用：斜板不折断、不坍塌，采用~6mm硬质PVC板或~8mm优质PP板特殊制作成分离薄板，模块嵌入式安装，强度高且易拆装及保养。
- 5、排泥顺畅：中申设计的沉淀池均无死角，排泥建议用泵抽吸的排泥方式。



## Characteristics and advantages:

1. Higher efficiency, smaller footprint: inclined plates extended to 1.5m, separation efficiency improved (higher 1.5 ~ 2.0 times) comparing with radial flow clarifier and vertical clarifier and save 80% of area.
2. Excellent hydraulic conditions: no hydraulic corner and vortex, better precipitation performance.
3. Inclined plates Chokeless : plates are of angle 60 degrees, spacing between 80 ~ 100 mm, back-washing device used.
4. Strong and durable: Inclined plates are breakless, collapseless. Adopt 6mm hard PVC plates or 8 mm high quality PP plates as special separation plate, module embedded installation, high strength, easy disassembling and maintenance.
5. Sludge discharge smoothly : no dead angle, sludge pump is recommended



## LST1型兰美拉沉淀器

LST1是一种锥形泥斗沉淀器，结构简单，无能耗。  
缺点：设备高度较高。常为满足运输要求，做成分体组合式，由上下2段可拆卸部分组成。

LST1 is a conical bottom lamella clarifier, simple structure, no power consumption.  
For shipment, It can be disassembled as top and bottom parts to fit into container.

型号 Model	处理量 Capacity			规格尺寸 Dimension (m)			管口表 Nozzle list (DN) GB/JIS/ANSI			
	(m <sup>3</sup> /h)	L	W	H/H <sub>1</sub>	进水口 Inlet (a)	出水口 Outlet (b)	排泥口 Sludge outlet (c)	反洗口 Backwash (d)		
LST1-001	0~1	1.6	0.8	2.0/2.0	25	25	50	50		
LST1-003	0~3	1.60	1.10	2.0/2.0	50	50	50	50		
LST1-005	0~5	2.6	1.6	2.9/2.9	80	50	50	50		
LST1-010	0~10	3.40	1.80	3.6/1.8	100	80	50	50		
LST1-020	0~20	3.4	2.2	3.6/1.8	150	100	50	50		
LST1-030	0~30	4.2	2.2	4.0/2.2	150	150	50	50		
LST1-040	0~40	5.3	2.2	3.6/1.8	200	150	50×2	50		
LST1-050	0~50	6.3	2.2	3.8/2.0	200	200	50×2	50		
LST1-060	0~60	7.2	2.2	4.0/2.2	250	200	50×2	50		
LST1-070	0~70	7.2	2.6	4.0/2.2	250	200	50×2	50		
LST1-080	0~80	7.2	2.7	4.0/2.2	250	200	80×2	50		
LST1-090	0~90	6.7	3.1	4.0/2.2	250	250	80×2	50		
LST1-100	0~100	7.2	3.1	4.0/2.2	250	250	80×2	50		
LST1-120	0~120	8.3	3.3	4.0/2.2	300	300	80×2	50		
LST1-150	0~150	9.8	3.3	4.0/2.2	350	300	80×3	50		





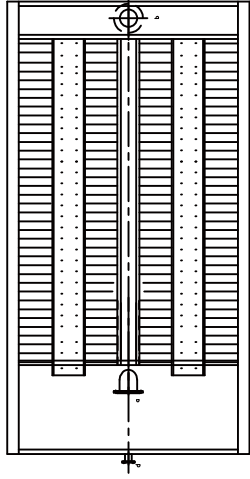
## LST2型兰美拉沉淀器

LST2是一种机械刮泥型沉淀器，大幅降低设备高度，排泥顺畅，具有显著的大型沉淀器成套化优势。  
LST2 is a mechanical lamella clarifier with bottom sludge scraper, which can effectively reduce the equipment height and discharge sludge smoothly.

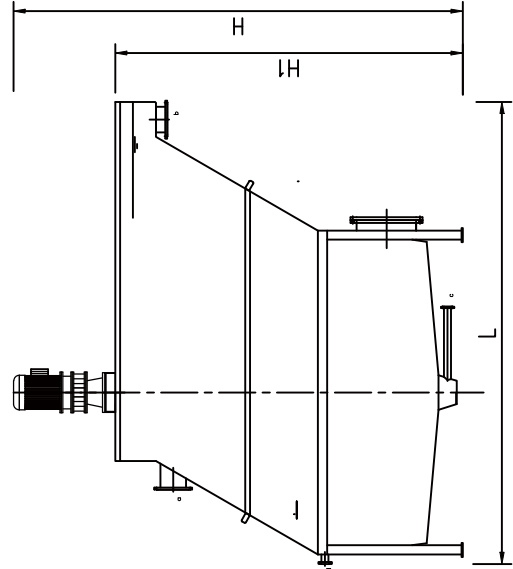
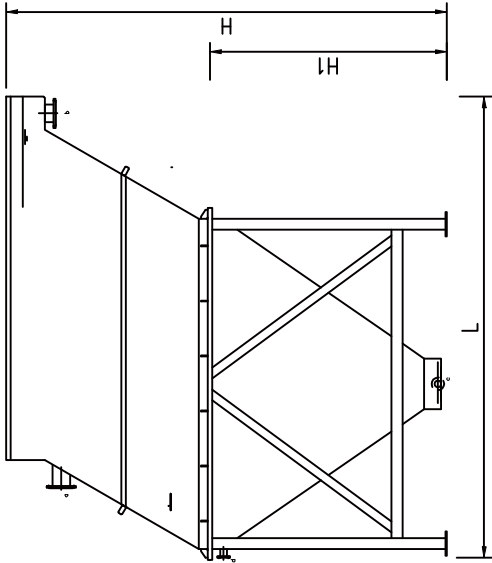
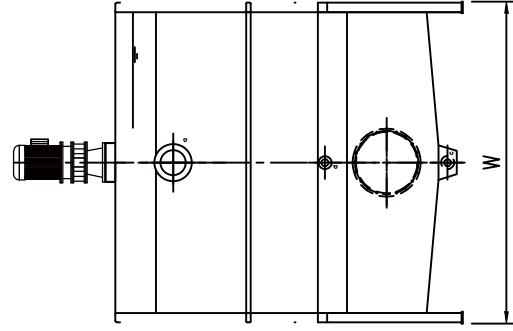
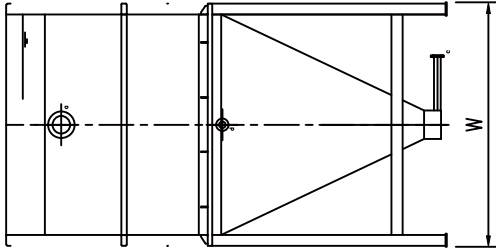
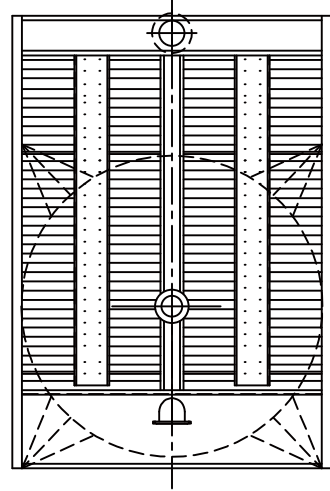
型号 Model	处理量 Capacity			规格尺寸 Dimension ( m )			刮泥浓缩机 Sludge scraper		管口表 Nozzle list ( DN ) GB/JIS/ANSI				
	(m <sup>3</sup> /h)	L	W	H/H <sub>1</sub>	Kw	进水口 Inlet ( a )	出水口 Outlet ( b )	排泥口 Sludge outlet ( c )	反洗口 Backw ( d )				
LST2-005	~5	2.6	1.6	3.4/2.5	0.25	80	50	50	50				50
LST2-010	~10	3.4	1.8	3.8/3.0	0.25	100	80	80	50				50
LST2-020	~20	3.4	2.2	3.8/3.0	0.25	150	150	150	50				50
LST2-030	~30	4.2	2.2	3.8/3.0	0.25	150	150	150	50				50
LST2-040	~40	4.0	2.8	3.8/3.0	0.25	200	200	200	50				50
※LST2-040	~40	5.3	2.2	3.8/3.0	0.25×2	200	200	200	50×2				50
LST2-050	~50	4.7	2.8	3.8/3.0	0.25	200	200	200	50				50
※LST2-050	~50	6.3	2.2	3.8/3.0	0.25×2	200	200	200	50×2				50
LST2-060	~60	4.80	3.00	3.8/3.0	0.25	250	200	200	50				50
※LST2-060	~60	7.2	2.2	3.8/3.0	0.25×2	250	200	200	50×2				50
LST2-070	~70	5.1	3.2	3.8/3.0	0.25	250	200	200	80				50
LST2-080	~80	5.10	3.40	4.0/3.2	0.25	250	250	250	80				50
LST2-090	~90	6.3	3.0	4.0/3.2	0.25×2	250	250	250	80×2				50
LST2-100	~100	7.10	3.00	4.0/3.2	0.25×2	250	250	250	80×2				50
LST2-110	~110	7.80	3.0	4.0/3.2	0.25×2	300	250	250	80×2				50
LST2-120	~120	8.30	3.00	4.0/3.2	0.25×2	300	300	300	80×2				50



LST1



LST2



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## 兰美拉 (Lamella) 沉淀器篇 Lamella Clarifier

18~22

- LST1-锥型
- LST2-机械型

LST1-Corn Shape Bottom

LST2-Bottom With Sludge Scraper

## 周边配套设备篇

### Supporting Equipment

24~28

- MFR机械型
- PFR管式型
- PM 静态/管道型
- PAM全自动泡药机
- SJY单槽型
- DJY双槽型
- HS 水力栅

MFR-Machinical Chemical Reaction

PFR-Pipe Flocculator

PM-Static Mixer

PL3-Automatic Polymer Preparation Device

SJY-Single Tank Chemical Dosing device

DJY-Double Tanks Chemical Dosing device

HS-Static Screen

ZXG型中心传动悬挂式刮泥机

28~29

ZXG-Centre Drive Sludge Scraper

其他设备

30

Other Equipments

## 周边配套设备篇



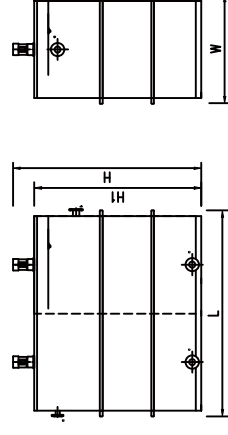
## MFR型机械化学混合反应器



- MFR由桨板式搅拌机和反应槽组成，分为单槽、双槽及多槽。接液部件均防腐材质或涂覆防腐层
- MFR device is made of paddle mixer and the reaction tank, includes single tank ,double tanks and multiple tanks .

## 特点及优势

- 反应时间充分，反应进程直观。  
Enough reaction time and clear reaction process
- 搅拌强度可通过调速进行控制。  
Stirring intensity adjusted by stirring speed



## PFR 管式化学混合反应器



- PFR属于水力混合反应器，通过消耗水头提供动能，通过管径及长度变化改变G值和反应时间，实现混合反应过程。
- PFR is hydraulic mixing device , providing reaction kinetic energy by hydraulic head pressure, changing the G value and the reaction time by transforming pipe diameter and length .

## PM静态混合器



- PM属于水力混合器，PM内安装若干固定混合单元，水流和药剂通过PM时被单元多次分割和改变并形成涡旋，达到混合目的。
- PM is hydraulic mixing device , installed numbers of stationary mixing unit .Water flow and polymer are split and changed to be vortex by mixed unit.



## PAM全自动泡药机



PAM全自动泡药机是一种一体式的，具备将PAM干粉连续制备成一定浓度（通常0.05~0.2%）溶液的装置。

该装置适用于高分子有机絮凝剂（PAM）的制备与投加，用户只需将药剂干粉直接加入设备的料斗中，即可实现全自动的投料、溶解、熟化、储存、计量加药等过程，整个过程无需人为操作，完全自动运行。料斗中的粉状药剂经定量給料装置送入混合器中，与水进行完全混合后进入溶液箱中，混合液经多级搅拌后形成均一浓度的溶液，最后进入贮液箱内，根据工艺需求用定量式泵浦进行投加。

## 特点及优势

- 全自动连续工作
- Automatic and continuous operation
- 配制溶液浓度可调
- Variable solution concentration
- 体积小，制备能力大
- Small footprint and great capacity
- 材质：不锈钢、PP及碳钢防腐可选。
- Material: Stainless steel, PP or mild steel with coating

PAM automatic polymer preparation unit is an integrated equipment that prepares PAM powder into 0.05~0.2% concentration PAM solution continuously.

It could be applied for PAM preparation and dosage. The users need to put powder into feeder directly, and the powder will be dissolved, diluted, aged and dosed automatically. No manual operation in the whole process.

PAM powder enters into mixing chamber by feeder unit, mixed with water and enters into solution chamber. Then the mixing solution will become uniform concentration, finally enters into storage chamber and dosed by metering pump

## SJY 单槽加药系统



SJY 是一款集化学品溶解稀释、溶液储存和液位控制于一体的简易加药装置。该装置在桶槽中注入一定体积水和化学品，通过溶解搅拌机作用下，溶解或稀释成所需浓度化学溶液，根据需要用定量式泵浦进行投加。

SJY is a simple chemical dosing system that combining with chemical dissolving, dilution and storage into one drum. Quantitative water and chemical are added into drum, dissolve and diluted into certain concentration solution by mixer, finally dosed by metering pump.

## DJY 双槽加药系统



DJY 是一款集化学品溶解稀释、溶液储存和液位控制于一体的能够连续配制连续投加的加药装置。该装置在溶解槽中注入一定体积水和化学品（粉剂或溶剂），通过溶解搅拌机作用下，溶解或稀释成所需浓度化学溶液后放流至溶液储槽，根据需要用定量式泵浦进行投加。

DJY is a continuously chemical dosing system that combining with chemical dissolving, dilution and storage into two drums. Quantitative water and chemical are added into one drum, dissolved and diluted into certain concentration solution by mixer finally enters into the other storage drum, then dosed by metering pump.

## HS 水力栅/水力筛/静态筛



# HS

### 关于产品：

水力栅是一种用于污水处理过程使用的固液分离装置。

### 应用领域：

工业废水预处理：造纸，纺织，制革，印染，化工以及屠宰行业。  
水力栅提供了一种经济、可连续运行的固液分离系统解决方案，  
无需维护与电耗。

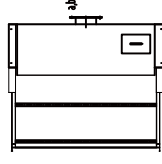
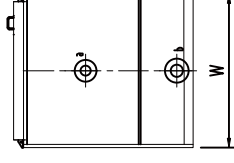
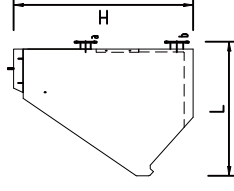
As a pretreatment equipment in industrial waste water with a mesh of between 0.5 and 1 mm, to eliminate the thick waste in the paper, textile, tanning, laundry, canning and milk industries and abattoirs etc.

The static screen offers an economic solution in the continuous solid-liquid separation process with almost no maintenance requirements and no energy input at all.

## 特点及优势

- 废水预处理的最理想固液分离选择
- 全不锈钢材质，坚固耐用。
- 性价比高、无需维护、无电能消耗。

型号 Model	筛网间距/筛网 Mesh size & Capacity (m <sup>3</sup> /h)				规格尺寸/Dimension (mm)			
	0.2mm	0.5mm	1.0mm	1.5mm	2.0mm	L	W	H
HS-300	3	6	13	19	30	1420	430	1900
HS-500	5	10	22	32	50	1420	630	1900
HS-600	6	12	27	39	60	1420	700	1900
HS-800	8	16	36	52	80	1420	930	1900
HS-1000	10	20	45	65	100	1420	1130	1900
HS-1500	15	30	65	100	150	1420	1630	1900



## ZXG型中心传动悬挂式刮泥机



## ZXG Sludge Scraper

### 用途：

- 中心传动悬挂式刮泥机适用于中心进水、周边出水、中心排泥的中小型径的沉淀池，主要用于工业废水处理 and 城镇污水处理项目的沉淀池排泥。

### Brief Introduction

- Center drive sludge scraper is applied for small and medium sized clarifier with central inlet, surrounding outlet and central sludge discharge. It is mainly used for sludge discharge of clarifiers especially for industrial wastewater and urban sewage treatment projects.

## 特点及优势

- 工作桥采用钢桁架结构，简洁、美观且轻巧，也可以采用钢砼梁平台。
- 具有安装、维护简便、运行费用低。
- 采用高能驱动装置，带过扭矩保护装置并可根据需要配装扭力计。
- 材质选择：碳钢防腐（环氧涂层、衬胶及FRP均可选）、不锈钢（SUS304或SUS316L）。
- 可选：提耙机构、浮渣撇除装置、V型出水堰板等。

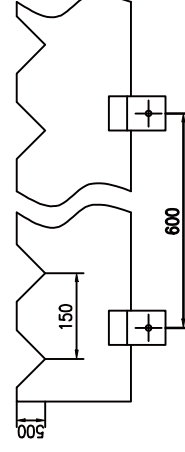
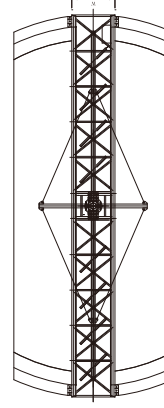
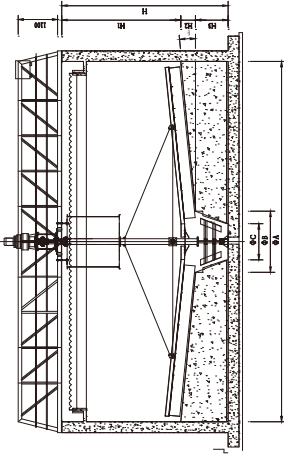
## Superiority

- Working bridge with steel truss structure, simple, elegant and lightweight, also can be made of concrete platform.
- Simple installation & maintenance and low operating cost.
- High Energy-efficient drives with over torque protection device, or can be equipped with torsionmeter as needed.
- Material options: carbon steel with coating(epoxy,FRP or rubber), stainless steel (SUS304 or SUS316L).
- Optional units: rake unit, skimming device, V type outlet weir.



型号 Model	池径 Diameter (m)	池周边深 H Depth (m)	周边线速度 Peripheral line m/min	转速 Rotation	池底坡度 Bottom slope %	驱动功率 Driving (kW)	马达品牌 Motor	导流筒直径 Guide tube (m)	刮泥机标准扭矩 Standard N.m	减速机 Gear reducer model
ZXG3	3	2.5~3.5	2.1	0.23	0.5~1.0	0.18/0.55	TECO/AB B	0.5	370	摆线直联 Direct coupling
ZXG4	4	2.8~4.0	2.4	0.19				0.6	600	
ZXG5	5	2.8~4.0	2.3	0.14		0.25/0.55		0.7	1100	
ZXG6	6	2.8~4.0	2.2	0.11				0.8	1500	
ZXG7	7	3.0~4.0	1.7	0.08				1.0	2000	
ZXG8	8	3.0~4.0	1.8	0.07		0.55/0.55		1.1	2640	
ZXG9	9	3.0~4.0	1.8	0.06				1.2	3200	
ZXG10	10	3.0~4.0	1.6	0.05		1.4		4000		
ZXG11	11	3.0~4.0	1.6	0.05		0.75/0.75		1.5	4800	
ZXG12	12	3.0~4.0	1.7	0.04				1.7	5750	
ZXG13	13	3.0~4.0	1.7	0.04		0.5~1.0		0.55/0.55	1.8	
ZXG14	14	3.0~4.0	1.6	0.04	1.9		7900			
ZXG15	15	3.0~4.0	1.8	0.04	2.1		9100			
ZXG16	16	3.0~4.0	1.7	0.03	2.2		10300			
ZXG17	17	3.0~4.0	1.7	0.03	2.4		11700			
ZXG18	18	3.0~4.0	1.7	0.03	2.5		13000			
ZXG19	19	3.0~4.0	1.6	0.03	2.6		14600			
ZXG20	20	3.0~4.0	1.7	0.03	2.8		16200			

旋转方向：顺时针



## 其他设备



撬装式气浮系统 Skid mounted DAF system



撬装式沉淀池系统 Skid mounted Lamella clarifier system



集装箱式固液分离系统 Containerized solid-liquid separation system

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[www.gotrading.co.th](http://www.gotrading.co.th)



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