



**WATER AND PROCESS TECHNOLOGY**

## **WATER TREATMENT EQUIPMENT**



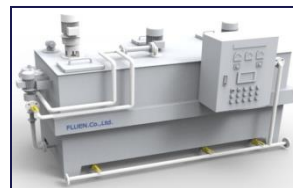
■ **CENTRIFUGE DECANTER**

(遠心脱水機)

■ **AUTOMATIC POLYMER MELTER**

(聚合物 自动 融解设备)

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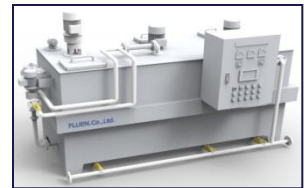


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## Distributed in India by Hy-Precision Technology

Bhumi World, Building # D8, office # 236,

Near Kalyan -Bhiwandi Junction

PO : Pimplasa, Tal: Bhiwandi,

Dist Thane, MS, India. Pin - 421302

Tel LL + 91 9272222393, 9272222396

Email : [sales@hyprecisiontechnology.com](mailto:sales@hyprecisiontechnology.com)

Website : [www.hyprecisiontechnology.com](http://www.hyprecisiontechnology.com)



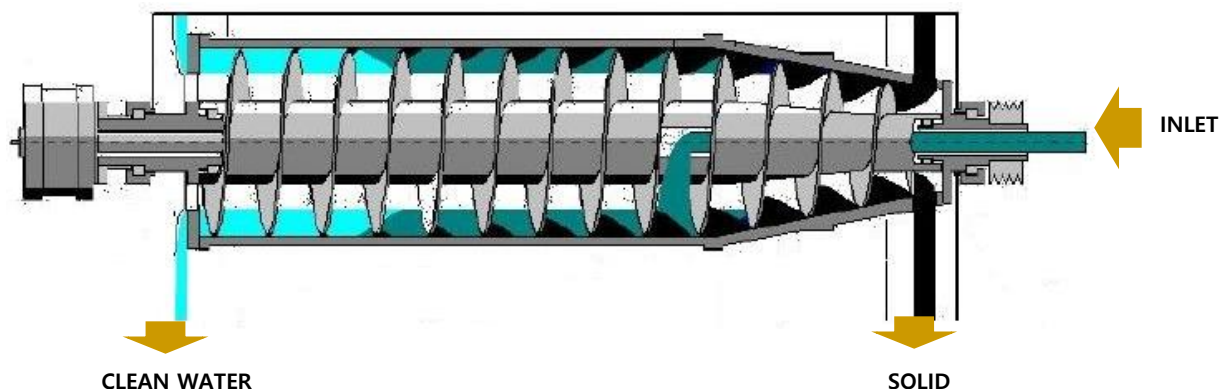
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*Staff of Fluen Co., Ltd.*

## CENTRIFUGE DECANTER

### Working principles (启动原理)



Screw decanter separates medium from centrifugal force which is generated inside of bowl rotating high speed when insert 2 kinds(liquid/solid) or 3 kinds(liquid / liquid/solid) of medium that has different specific gravity. Divided solid material discharged externally by using bowl and screw in regular speed differences. Also liquid discharge outside through extra vent.

Screw decanter 在高速旋转中的Bowl内部，投入需要分离二相或三相的处理物，利用高速旋转时发生的离心力，把处理物分离二相或三相。

分离的固形物利用BOWL和Screw的固定的差速，把处理物向BOWL外部排出，已分离的液体也通过别的排出口向外部排出。

### Feature(一般特点)

- - Variety application
- - Easiness maintenance
- - Sustained operation is possible without personnel
- - Comfortable working environment
- - Various material according to different application
- - Economical chemical use
- - Diverse material (using corrosion/abrasion resistant)
- - 多种多样 Application
- - 管理容易
- - 可以无人连续运转
- - 作业环境干净
- - 据Application多样的材质
- - 容易添加药品管理
- - 材质的多样性 (耐腐蚀性/耐磨耗性 材料)

### Application(适用)

- Eco-technology
- Steel / Iron manufacturing / Oil / Mine business / Oil refining
- Chemistry / Medical / Bio-tech
- Beverage/ alcohol technology.
- Dairy farming Technology
- Oil & Fat treatment
- Painting industry & Chemical treatment
- Processed marine & animal
- 环境技术
- 铁岗 / 炼铁 / 石油 / 矿山 / 精炼石油
- 化学 / 医药 / 生物 / 技术
- 饮料/酒精技术方面
- 乳品农业技术方面
- 处理油或脂肪
- 粉刷产业/化学处理反面
- 水产/畜产处理反面

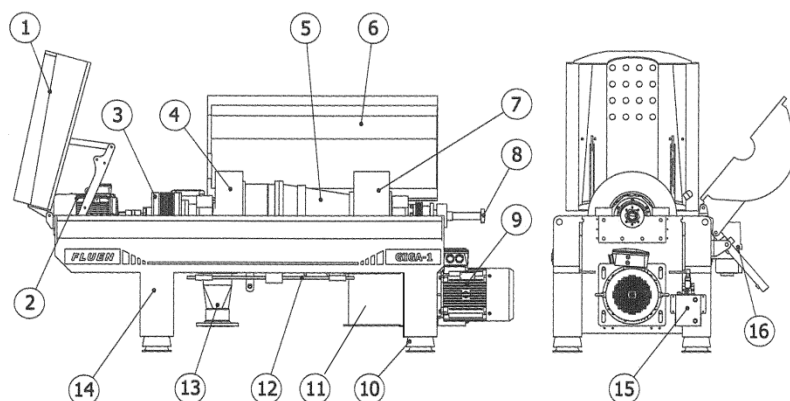
# CENTRIFUGE DECANter – F series

## Advantage / Benefit(特点/优点)

- ◆ DRM(Direct Rotating Mechanism) SYSTEM
  - Prevent 'TRIP' condition by density shift of sludge inflow.
  - No Belt type : Cost reduction of maintenance
- ◆ Open Screw Conveyor type
  - Control insert sludge point without disassemble : the highest percentage of water content
- ◆ Installed dehydrated cake and sewage outlet, shatter proof cover.
- ◆ All-in-one type line-mixer feeding equipment(inside of feed pipe)
  - line mixer installed in order to mixing chemical and sludge
- ◆ Automatic top cover switch (hydraulic) - optional choice
- ◆ DVA : Dynamic Vibration Absorber – optional choice
- ◆ - 防止随流入污泥浓度变化的反动现象.
  - 直接连接方式(No Belt type) – 节省维修费的效果
- ◆ - 虽然没分解,但可以调整投入污泥的地点 – 含水率 最高化
- ◆ 设置脱水CAKE排出口和 处理水排出口的防止碰酸的Cover
- ◆ Line-Mixer 一体形 Feeding 设备(Feed pipe内) - 为了污泥和药品的混合, 设置Line Mixer.
  - 选择项目
- ◆ 为了开关上部 Cover, 设置自动开关设备(油压式) -选择项目
- ◆ 防止震动 动集尘器(DVA : Dynamic Vibration Absorber) -选择项目



## Structure(结构)



| NO | 명 칭                              |
|----|----------------------------------|
| 1  | Secondary Motor Cover            |
| 2  | Secondary Motor                  |
| 3  | Gear Box                         |
| 4  | Cover for clean water            |
| 5  | Bowl & Scroll assembly           |
| 6  | Main Cover                       |
| 7  | Solid Cover                      |
| 8  | Feed Pipe                        |
| 9  | Main Motor                       |
| 10 | Vibration Damper                 |
| 11 | Chute for Cake                   |
| 12 | Dynamic Vibration Absorber       |
| 13 | Chute for Effluent (Clean Water) |
| 14 | Frame                            |
| 15 | Hand Pump                        |
| 16 | Auto Grease Injector             |

## CENTRIFUGE DECANter – F series

### SPECIFICATION(离心脱水机工序说明)

| Model  | Capacity<br>(m3/h) | Main Drive<br>(kW) | Scroll Drive<br>(kW) | DIMENSION(mm) |       |       | WEIGHT<br>(KG) |
|--------|--------------------|--------------------|----------------------|---------------|-------|-------|----------------|
|        |                    |                    |                      | W(폭)          | L(길이) | H(높이) |                |
| MEGA-1 | 1-2                | 5.5                | 2.2                  | 800           | 2000  | 950   | 1200           |
| MEGA-2 | 2-5                | 7.5                | 3.5                  | 800           | 2400  | 950   | 1400           |
| GIGA-1 | 3-7                | 15                 | 7.5                  | 940           | 2900  | 1100  | 1600           |
| GIGA-2 | 5-10               | 18.5/22            | 7.5                  | 940           | 3200  | 1100  | 1800           |
| GIGA-3 | 8-15               | 18.5/22            | 7.5                  | 940           | 3500  | 1100  | 2000           |
| TERA-1 | 15-25              | 45                 | 18.5                 | 1200          | 4100  | 1500  | 3500           |
| TERA-2 | 20-40              | 45                 | 18.5                 | 1200          | 4500  | 1500  | 4000           |
| TERA-3 | 30-50              | 55                 | 22                   | 1200          | 5000  | 1500  | 4500           |
| HERA-1 | 35-60              | 45/55/75           | 22                   | 1400          | 4500  | 1800  | 6000           |
| HERA-2 | 40-75              | 45/55/75           | 22                   | 1400          | 5000  | 1800  | 7000           |

### SPECIFICATION(离心浓缩机工序说明)

| Model    | Capacity<br>(m3/h) | Main Drive<br>(kW) | Scroll Drive<br>(kW) | DIMENSION(mm) |       |       | WEIGHT<br>(KG) |
|----------|--------------------|--------------------|----------------------|---------------|-------|-------|----------------|
|          |                    |                    |                      | W(폭)          | L(길이) | H(높이) |                |
| MEGA-100 | 2-5                | 5.5                | 2.2                  | 800           | 2000  | 950   | 1200           |
| MEGA-200 | 4-10               | 7.5                | 3.5                  | 800           | 2400  | 950   | 1400           |
| GIGA-100 | 6-15               | 15                 | 7.5                  | 940           | 2900  | 1100  | 1600           |
| GIGA-200 | 10-20              | 18.5/22            | 7.5                  | 940           | 3200  | 1100  | 1800           |
| GIGA-300 | 15-30              | 18.5/22            | 7.5                  | 940           | 3500  | 1100  | 2000           |
| TERA-100 | 25-45              | 45                 | 18.5                 | 1200          | 4100  | 1500  | 3500           |
| TERA-200 | 40-60              | 45                 | 18.5                 | 1200          | 4500  | 1500  | 4000           |
| TERA-300 | 50-75              | 55                 | 22                   | 1200          | 5000  | 1500  | 4500           |
| HERA-100 | 55-80              | 45/55/75           | 22                   | 1400          | 4500  | 1800  | 6000           |
| HERA-200 | 65-90              | 45/55/75           | 22                   | 1400          | 5000  | 1800  | 7000           |

Note) 1. Above mentioned table is standard. Specific data can be change according to type of sludge, density, option etc..

#### 2. Material

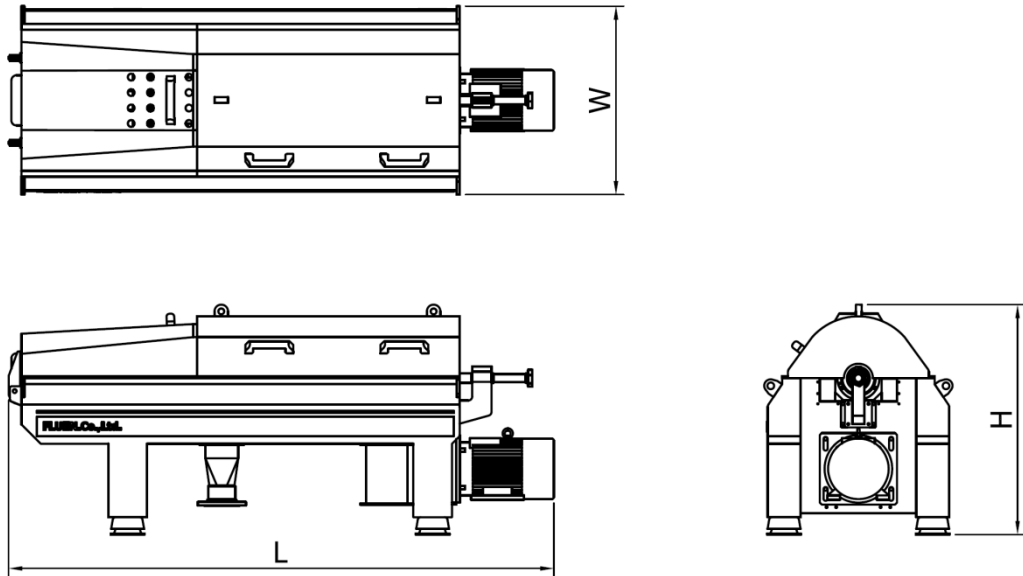
- Standard material : SUS304
- Optional material : SUS316, DUPLEX
- Extra material : Inquiry to head-quarter office

1. 本功能书是标准功能，根据污泥的种类和浓度，制品的工序说明和规格会变 - 其他材质：向本社发问。

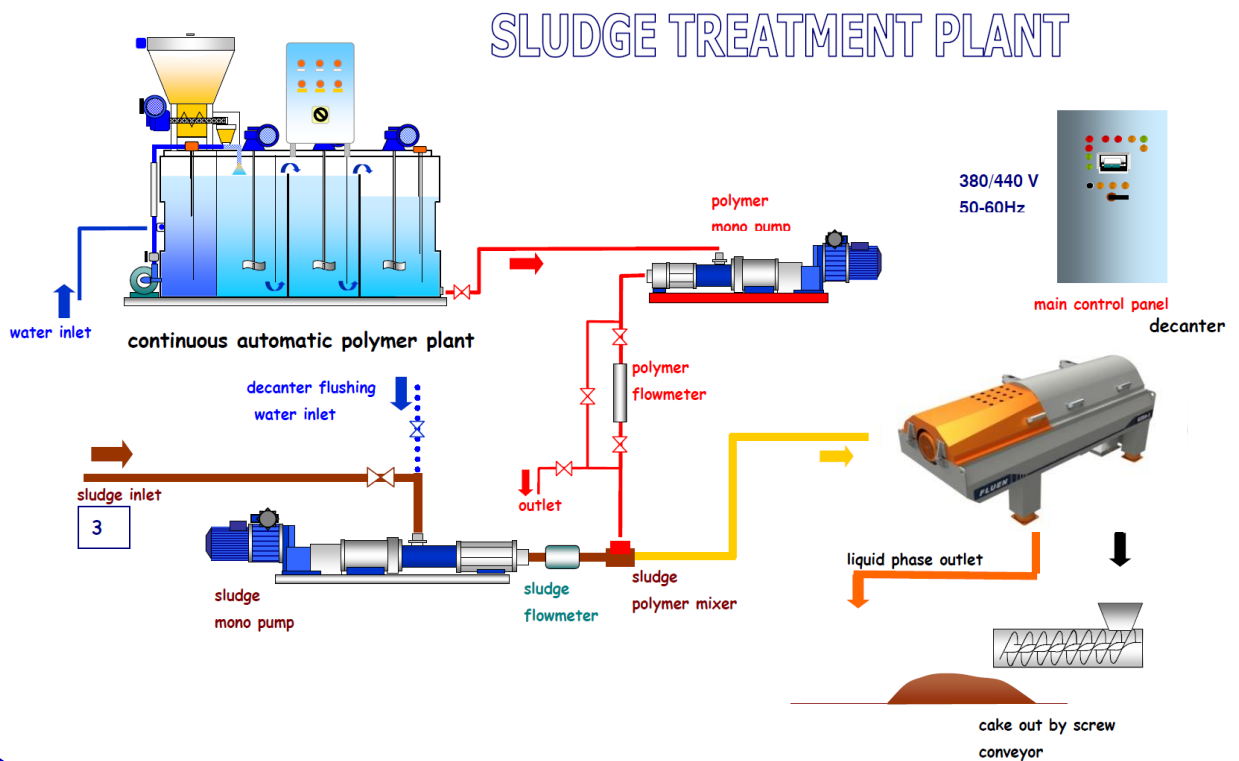


# CENTRIFUGE DECANTER – F series

## Drawing(外形图)



## Flow diagram(线路图)



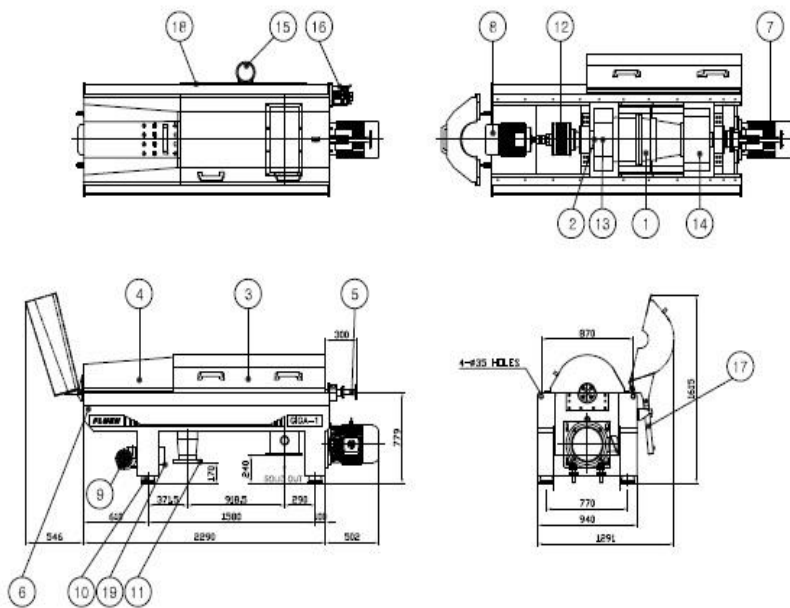
## CENTRIFUGE DECANTER– P series

### Advantage / Benefit(特点和优点)

- ◆ Automatic speed sensing system(Rotor variator)
  - control speed of bowl / scroll according to inflow sludge or changing volume of torque.
  - Energy conservation system
- ◆ Open Screw Conveyor type
  - Control insert sludge point without disassemble : the highest percentage of water content
- ◆ Apply various material by different application
  - STS304 / 316 / Duplex STS
- ◆ Minimize noisy and vibration following tunnel type
- ◆ Anti Vibration Damper
- ◆ 自动差速调整系统 ( Roto variator)
  - 按流入污泥的浓度和torque的变化量，控制bowl / Scroll的差速
  - 节省能源系统
- ◆ Open Screw Conveyor 方式
  - 虽然没分解，但可以调整投入污泥的地点 – 含水率 最高化
- ◆ 根据Application，适用多样的材质
  - STS304 / 316 / Duplex STS
- ◆ 根据隧道结构(Tunnel type)，噪音和震动最小化
- ◆ Anti Vibration Damper ( 防震设备)



### Structure(结构)



| NO | 명 칭               |
|----|-------------------|
| 1  | BOWL              |
| 2  | SCROLL            |
| 3  | BOWL COVER        |
| 4  | DIFF. MOTOR COVER |
| 5  | FEEDING PIPE      |
| 6  | FRAME             |
| 7  | MAIN MOTOR        |
| 8  | DIFF. MOTOR       |
| 9  | FAN COOLER        |
| 10 | FOOT MOUNTING     |
| 11 | DRAIN PORT        |
| 12 | DECCELERATOR      |
| 13 | CASING-A          |
| 14 | CASING-B          |
| 15 | GREASE PUMP       |
| 16 | HAND PUMP         |
| 17 | CYLINDER          |
| 18 | GREASE PIPE       |
| 19 | TERMINAL BOX      |



## REFERENCE LIST - CENTRIFUGE DECANTER



Sewage water application



Pig manure application



Sewage water application



Chemical waste water application



Food waste water application



Surimi waste water application



## REFERENCE LIST - CENTRIFUGE DECANTER



Effluent water application



Sewage water application



Hot & rolling water application



Power Plant water application



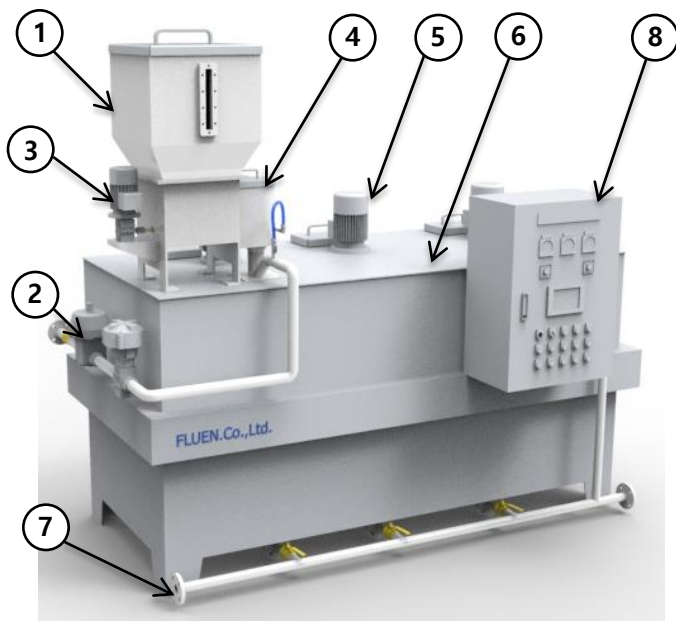
Bio water application



Steel water application

## POWDER TYPE(粉末形) - PPS MODEL

### Structure and title(构成和名称)



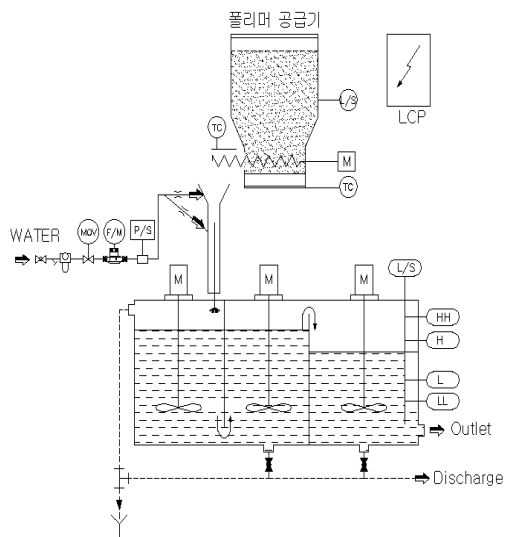
| NO. | TITLE - 名称               |
|-----|--------------------------|
| 1   | Hopper                   |
| 2   | Water control unit       |
| 3   | Power feeder and breaker |
| 4   | Pre-dilution chute       |
| 5   | Stirrer                  |
| 6   | Dissolving tank          |
| 7   | Drain                    |
| 8   | Electrical control panel |

### Advantage / Benefit(特点和优点)

- Integrated process of supplying powdered polymer, mixing, melting, storage and ripen
- Automatic and continuous melting equipment in partition divided type.
- Prevent congelment phenomenon by moisture absorption.
- complete automatic control system.
- Melting density : 0.0 ~ 0.6% (alternative)
- Material : STS 304(Standard), other material s are available.

- 按粉末聚合物供给，混合、溶解、贮藏、熟成的四个过程合一过程。
- 隔壁分离形的自动、继续性的溶解设备。
- 按吸湿防止扭结现象。
- 比例供给方式的完全自动控制，无人运转系统。
- 溶解浓度：0.0 ~ 0.6%（可以选择）
- 材质：STS 304(Standard), 可以预订其他材质。

### FLOW SHEET

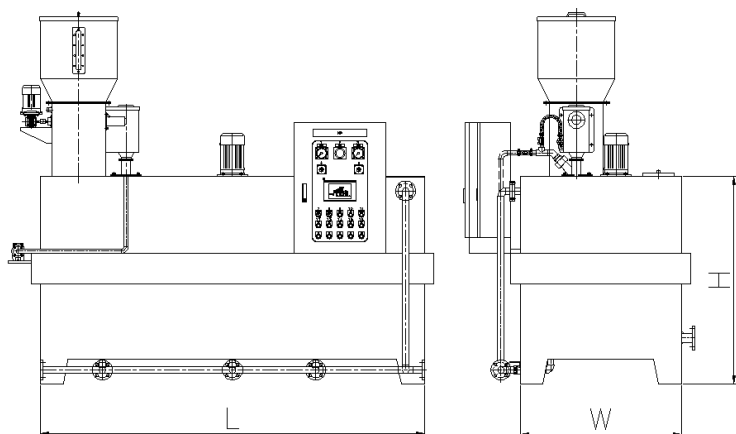






## POWDER TYPE (粉末形) - PPS MODEL

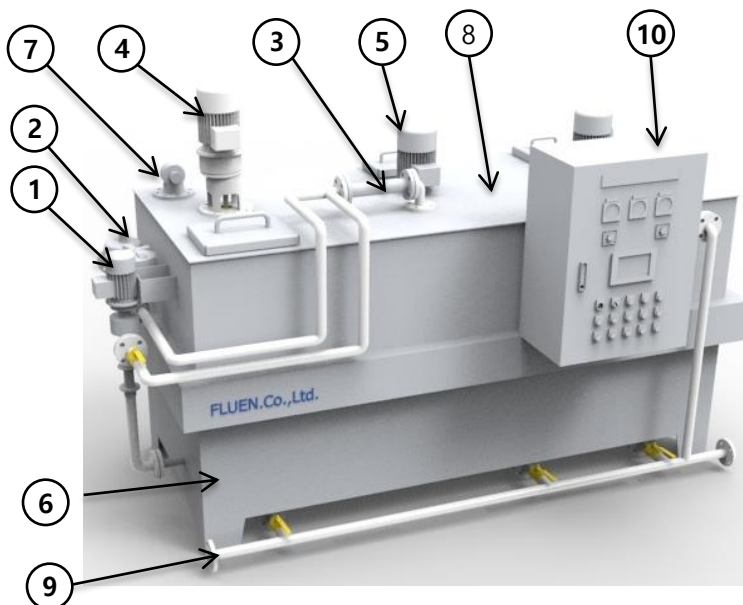
### ● Specification (工序说明)



| Model  | Capacity<br>(ℓ/hr) | Power<br>(kW) | Dimension (mm) |       |       | Weight<br>(kg) |
|--------|--------------------|---------------|----------------|-------|-------|----------------|
|        |                    |               | W              | L     | H     |                |
| PPS-0  | 500                | 1.2           | 600            | 1,450 | 800   | 300            |
| PPS-1  | 1,000              | 1.5           | 950            | 1,800 | 1,000 | 400            |
| PPS-2  | 2,000              | 3             | 1,000          | 2,000 | 1,200 | 500            |
| PPS-3  | 3,000              | 3             | 1,050          | 2,500 | 1,350 | 900            |
| PPS-4  | 4,000              | 3             | 1,400          | 2,700 | 1,400 | 1,200          |
| PPS-5  | 5,000              | 3             | 1,400          | 2,900 | 1,500 | 1,500          |
| PPS-6  | 6,000              | 3             | 1,500          | 3,100 | 1,550 | 1,700          |
| PPS-8  | 8,000              | 5             | 1,600          | 3,800 | 1,550 | 2,100          |
| PPS-10 | 10,000             | 5             | 2,200          | 3,500 | 1,600 | 2,700          |

## ■ LIQUID TYPE(液相形) - PLS MODEL

### ● Structure and title(构成和名称)



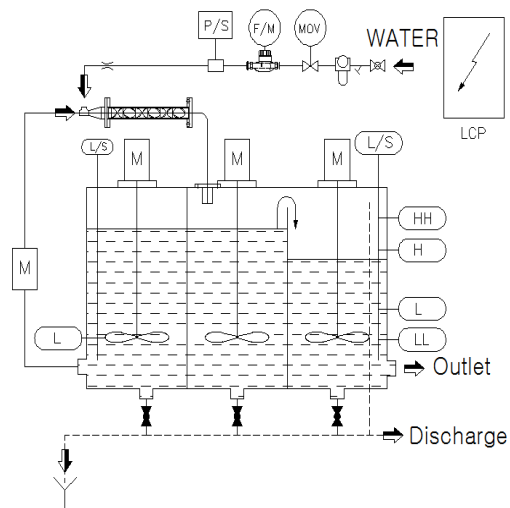
| NO. | TITLE (名称)                    |
|-----|-------------------------------|
| 1   | Liquid pump                   |
| 2   | Water control unit            |
| 3   | Line-mixer                    |
| 4   | Polymer mixer                 |
| 5   | Stirrer                       |
| 6   | Polymer storage tank          |
| 7   | Sensor for process and safety |
| 8   | Dissolving tank               |
| 9   | Drain                         |
| 10  | Electrical control panel      |

### ● Advantage / Benefit(特点和优点)

- Integrated process of supplying powdered polymer, mixing, melting, storage and ripen
- Automatic and continuous melting equipment in partition divided type.
- Complete mixing type with Line-Mixer.
- complete automatic control system.
- Melting density : 0.05 ~ 2% (alternative)
- Material : STS 304(Standard), other material s are available.

- 按液相聚合物定量供给，混合、溶解、贮藏、熟成的四个过程合一过程。
- 隔壁分离形的自动、继续性的溶解设备。
- 利用Line-Mixer，完全混合方式。
- 比例供给方式的完全自动控制，无人运转系统。
- 溶解浓度：0.02 ~ 2% (可以选择)
- 材质：STS 304(Standard), 可以预订其他材质。

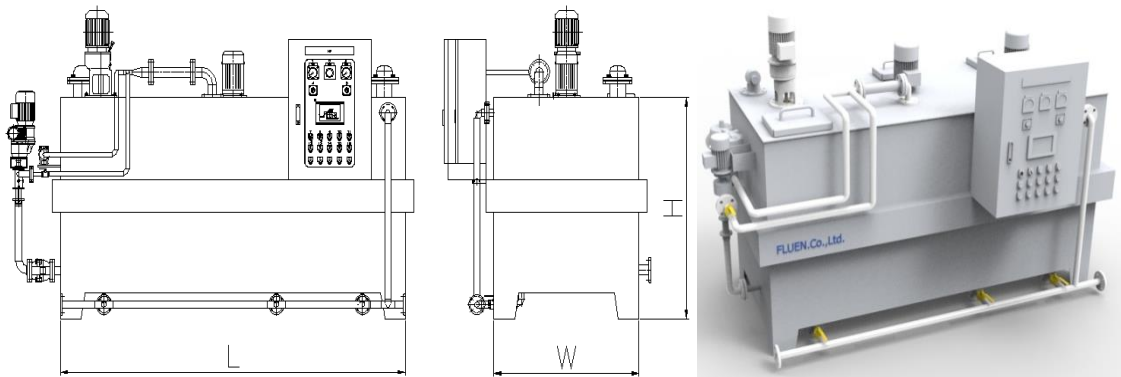
### FLOW SHEET





## ■ LIQUID TYPE(液相形) - PLS MODEL

### ● Specification(工序说明)



| Model  | Capacity<br>(t/hr) | Power<br>(kW) | Dimension (mm) |       |       | Weight<br>(kg) |
|--------|--------------------|---------------|----------------|-------|-------|----------------|
|        |                    |               | W              | L     | H     |                |
| PLS-0  | 500                | 1.6           | 600            | 1,450 | 800   | 300            |
| PLS-1  | 1,000              | 2             | 950            | 1,800 | 1,000 | 500            |
| PLS-2  | 2,000              | 4             | 1,000          | 2,000 | 1,200 | 600            |
| PLS-3  | 3,000              | 4             | 1,050          | 2,500 | 1,350 | 1,200          |
| PLS-4  | 4,000              | 4             | 1,400          | 2,700 | 1,400 | 1,500          |
| PLS-5  | 5,000              | 4.5           | 1,400          | 2,900 | 1,500 | 1,800          |
| PLS-6  | 6,000              | 4.5           | 1,500          | 3,100 | 1,550 | 2,000          |
| PLS-8  | 8,000              | 8             | 1,600          | 3,800 | 1,550 | 2,400          |
| PLS-10 | 10,000             | 8             | 2,200          | 3,500 | 1,600 | 2,900          |



## ■ POLYMER AUTOMATIC MELTING SYSTEM

### ■ Auto control system of polymer automatic melting equipment (聚合物自动溶解设备的自动控制运转系统)

The Polymer which is stored in Hopper or liquid storage tank supplied to Pre-dilution chute or Mixer by Screw or controlled volume pump, then It goes 1<sup>st</sup> melt with strong turbulence, pass through 3way partition device, Finally complete melt and ripen carry on. Afterwards, move to process.

- Composed automatic water control system.
- Composed level signal method in order to check residual quantity of powered of liquid polymer.
- Composed temperature control system for prevent congealment phenomenon.
- Continual supply available by sensing max. & min. level of tank. (Automatic level control system)
- Proportional control method by PLC and touch-screen display.

在贮藏Tank里贮存的聚合物通过精巧的螺旋推进器 ( SCREW ) 或者定量 Pump后, 向Pre-dilution chute ( 喷射溶解设备 ) 或者Mixer供给。按强有力的乱流进行一次混合溶解, 然后再通过隔壁方式的三段分离设置, 进行完全溶解和熟成过程, 最终对Process供给的方式。

- 自动水调整系统构成。
- 为了确认粉末聚合物或者液相聚合物的残留量, 构成水平信号方式。
- 为了防止粉末聚合物的扭结现象, 构成温度调整系统。
- 到达贮藏库的最高水位或者最低水位时, 自动感知继续供给。  
(自动水平控制系统构成)
- 按PLC的连续比例方式, 和触摸屏表示状况或图像构成

### ■ APPLICATION(适用方面)

- Sewage, wasted water, water treatment facility.
- Food & drink treatment facility
- Livestock treatment facility
- Every wasted water facility in industrial field.
- Chemical treatment equipment. (precipitation, pressure floatation)
- Enrichment, dehydration equipment.
- 污水、废水、净水处理设施。
- 食物垃圾处理设施。
- 畜产废水处理设施。
- 炼铁、钢铁等全产业废水处理设施。
- 化学的处理设施。(沉淀、加压浮上设备)
- 农畜, 脱水设备。



## FLUEN LOCATION

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Bhumi World, Building # D8, office # 236, Near Kalyan -Bhiwandi Junction PO : Pimplasa,

Tal: Bhiwandi, Dist Thane, MS, India. Pin - 421302

Tel LL + 91 9272222393, 9272222396

Email : [sales@hyprecisiontechnology.com](mailto:sales@hyprecisiontechnology.com)

Website : [www.hyprecisiontechnology.com](http://www.hyprecisiontechnology.com)