



分离过滤设备专业制造商  
SEPARATION AND FILTRATION EQUIPMENT MANUFACTURER



提纯 PURIFICATION | 浓缩 CONCENTRATION | 澄清 CLARIFICATION



华鼎企业  
HUADING SEPARATOR

## 关于华鼎

## ABOUT HUADING

华鼎企业成立于1954年，是依靠其自有提纯、浓缩和澄清关键技术提供专业化产品和工程方案的中国领先供应商。

华鼎提供的设备、系统和服务专门用于帮助用户提高优化工艺过程的性能。华鼎提供的解决方案可以帮助用户解决生产过程中的分离，过滤难题。

华鼎的产品服务于生物医药、饮料、植物提取、乳制品、油脂工业、化工能源、水处理等行业。产能从实验型500L/H，至工业型90T/H，共100余种标准机型。

华鼎的组织机构同顾客紧密合作，帮助他们始终在行业保持领先。

高效、有力、可靠，60多年来华鼎分离机始终在离心分离技术领域扮演着定义者的角色。因此可以说，华鼎的发展历程带来的不仅是它对顾客的责任，也开创了公司的愿景。

Founded in 1954, Huading Enterprise is one of China's leading suppliers who rely on their own key technologies for purification, concentration and clarification to provide specialized products and engineering solutions.

The equipment, systems and services offered by Huading are specially used for helping users to optimize the performance of their processes. Huading's solutions will help users to solve separation and filtration problems during their production.

Huading's products are used in such industries as biopharmacy, beverage, plant extraction, dairy products, oil, chemical energy, water treatment, etc. There are more than 1,00 types of standard machines, with the output varying from experimental type 500L/H to industrial type 90T/H.

Huading's organizations work closely with customers to enable them to be always leading in the industry.

Efficient, powerful and reliable, Huading Separator has always played a role of definer in the field of centrifugal separation technology for more than 60 years. Therefore, the development course of Huading not only brings our responsibilities for customers, but opens our future prospects.

### 中国最早的离心分离设备大型生产基地

The earliest large-scale production base of separation equipment in china





# 资质荣誉

# QUALIFICATION HONOR



# 部分工程案例

# PROJECT OF CUSTOMER





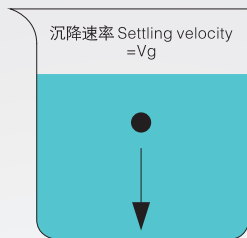
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## 离心分离原理

# CENTRIFUGAL SEPARATION PRINCIPLE

### 1.重力沉降与离心沉降

Gravty settling & centrifugal settling



重力分离 Gravity separation  
驱动力 Driving force 1g

Stokes' Law

$$Vg = \frac{d^2 (\rho_p - \rho_l)}{18\eta} g$$

$Vg$  = 重力沉降速度 Gravitational settling velocity(m/s)

$d$  = 颗粒直径 Partide deameter(m)

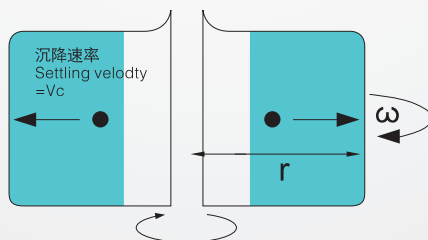
$\rho_p$  = 颗粒密度 Partide density(kg/m<sup>3</sup>)

$\rho_l$  = 液相密度 Liquid phase density(kg/m<sup>3</sup>)

$\eta$  = 液相黏度 Liquid phase viscosity(kg/ms)

$g$  = 重力加速度 Gravita tional acceleration(m<sup>2</sup>/s)

18 = 常量 Constant

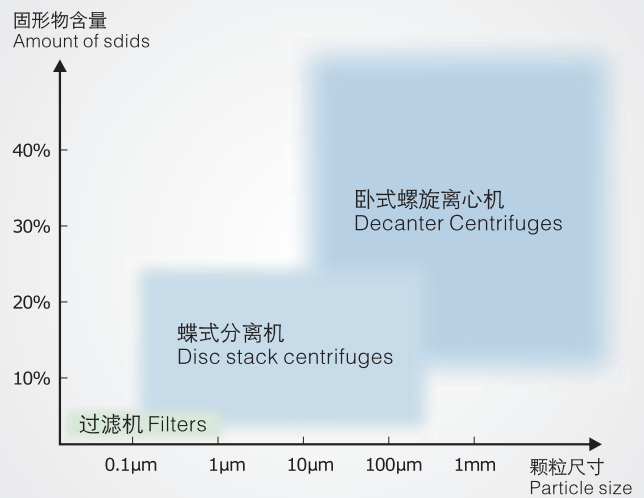


离心分离 Centrifugal separation  
驱动力 Driving force  $r\omega^2$

$$Vc = \frac{d^2 (\rho_p - \rho_l)}{18\eta} r\omega^2$$

### 2.常规分离设备应用范围

Application scope of centrifugal separation equipment



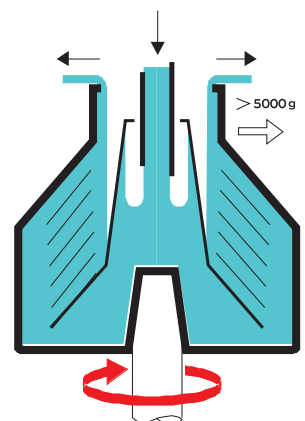
### 3.从重力分离到离心分离

From gravitational separation to centrifugal separation

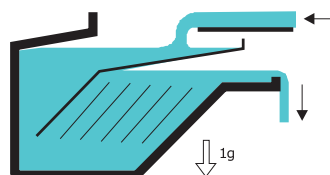
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(3).



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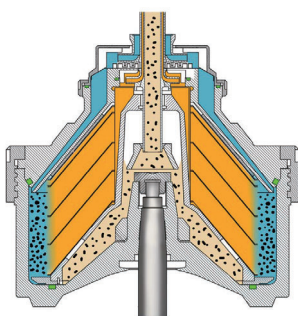


## 结构示意

## EQUIPMENT SCHEMATIC

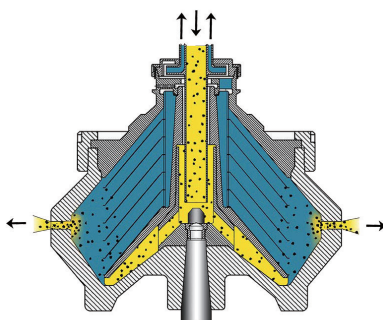
### 碟式离心机 Disc stack centrifuge

#### 1. 固体保留式 Solids retaining type



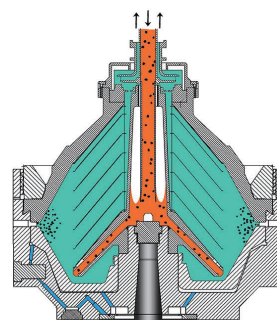
- 主要用于固形物含量 $<0.5\%$ 的物料；
- 人工手动除渣；
- Solid wall, used when the solids content is low  $<0.5\%$ .
- Manual removal of solids.

#### 2. 连续排渣式 Nozzle type



- 主要用于固形物含量 $<35\%$ 的物料；
- 连续不间断卸料；
- Used when the solids content is  $<35\%$ .
- Solids discharge continuously.

#### 3. 间歇排渣式 Solids ejecting type

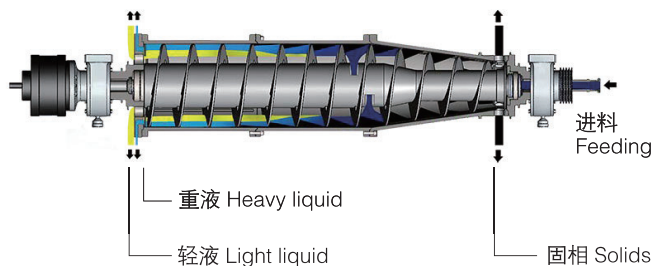


- 主要用于固形物含量 $\leq 10\%$ 的物料；
- 自动间歇排渣；
- Used when the solids content is  $\leq 10\%$ .
- Automatic operation. Solids discharged intermittently.

### 卧式螺旋沉降式离心机 Decanter centrifuge

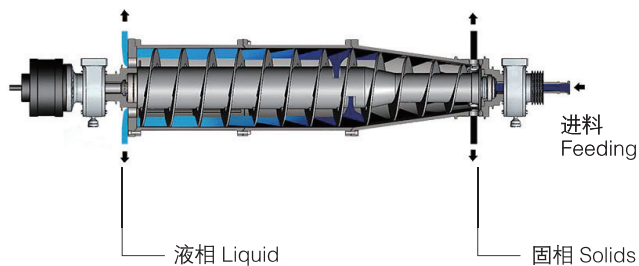
#### ① 三相离心分离 3-phase separation

液-液-固三相分离  
Liquid-Liquid-solid 3-phase separation



#### ② 两相离心分离 2-phase separation

固-液两相分离  
Liquid-solid 2-phase separation





## 行业应用

# APPLICATIONS

## 1. 乳制品及饮料 Dairy & Beverage Technology

牛奶是世界上最重要的食物之一。在过去的几年，乳制品行业是增长速度最快的食品行业之一。消费者对乳制品的风味及功能性提出了更高的要求。

啤酒、葡萄酒、保健酒、水果和蔬菜汁、咖啡、茶、大豆等饮品的生产加工对加工设备的要求与日俱增。对于饮料工业中的固-液澄清分离，碟式离心分离机与卧螺离心机的应用日益广泛。

Dairy products is one of the most important food for human, in past years, dairy products industry is one of the food industries with the alrgest growth rate, meanwhile, the much higher request of flavor and function is bring up for dairy products.

Beer, wine, fruit and vegetable juices, coffee, tea, soy drinks... the demands made by our customers with respect to quality and variety are increasing with the international growth in the beverage markets.

### 典型应用 Typical applications

- 乳品的脱脂，净化，除菌，浓缩  
Skimming / clarification/ bacteria removal / concentration
- 啤酒 Beer
- 红酒起泡葡萄酒和香槟 Wine, sparkling wine and champagne
- 柑桔类果汁 Citrus juice
- 高级水果，浆果，蔬菜和香草汁  
Premium juice from fruits, berries,vegetables and herbs
- 基本的软饮料原料 Base materials for soft drinks
- 精油 Essential oils
- 咖啡 Coffee
- 茶 Tea
- 大豆饮料 Soy drinks
- 谷物饮料 Cereal drinks



## 2. 中药及植物提取 Herb & Plant Extraction

世界上大约有50万种高等植物，其中大约7万种是植物性药物的基础。

在中药及植物提取物的加工过程中，为了有效提取价值组分，并保留其活性，需要采用不同的、具有针对性的加工工艺。一般情况下，它们是通过浸渍(用水或乙醇)或渗漉(用水或乙醇)获得的。水溶性(亲水性)成分用水萃取，脂溶性(亲脂)组分是用醇或其它溶剂从植物的特定部分提取。华鼎的离心分离方案广泛应用于加工过程中。

There are some 500,000 species of higher plants around the world, of which around 70,000 serve as a basis for plant-based drugs. In the process of processing herbs and plant extracts, in order to extract the value of ingredients effectively and retain their activities, various targeted process are required. Generally, they are obtained by maceration (extraction to equilibrium with water or alcohol) or percolation (extraction to exhaustion with water or alcohol). Water-soluble (hydrophilic) constituents can be extracted with water, whilst fat-soluble (lipophilic) constituents are extracted from a particular part of the plant with alcohol or other solvents. Centrifugal separation solutions from Huading Separator are widely used in these processes.

### 典型应用 Typical applications

- 茶叶 Tea
- 银杏叶 Ginkgo biloba
- 板蓝根 Radix isatidis
- 丹参 Salvia
- 双黄连 Shuanghuanglian
- 芦丁 Rutin
- 枇杷叶 Loquat leaf
- 罗汉果 Mangosteen
- 山奈酚 Kaempferol
- 金银花 Honeysuckle
- 苦杏仁苷 Amygdalin
- 甘草 Licorice
- 甜叶菊 Stevia
- 桑叶 Mulberry



## 3. 生物医药 Pharmaceutical Technology

无菌工艺控制，最佳的清洗功能，封闭的产品处理，符合GMP的要求，柔顺的产品处理，高效回收活性成分和可靠的规模化——生物医药的技术要求往往是很高的。华鼎企业专门为该行业而设计生产的相关离心分离设备，总是能满足这些要求。

Aseptic process management, optimum cleaning capability, closed product handling, reliable compliance with GMP requirements, gentle product treatment, efficient recovery of active ingredients and reliable scale-up the requirements of pharmaceutical biotechnology are high. With separators designed specifically for this sector, Huading Separator stands for reliable compliance with these requirements.

### 典型应用 Typical applications

- 人用疫苗和兽用疫苗 Human vaccines and veterinary vaccines
- 胰岛素 Insulin from biomass
- 施工图 Enzymes
- 发酵剂 Starter cultures (bacteria cultures)
- 人血蛋白 Human blood proteins
- 合成医药产品 Synthetic pharmaceutical products
- 动物细胞 Animal cell cultures
- 维生素 Vitamin
- 抗生素 Antibiotics
- 激素 Hormone



## 4. 环保 Environmental Technology

污泥脱水处理是城市污水、水厂排泥水、工农业废水处理工程中的重要环节。不仅能创造可观的经济效益，而且减少了污染排放。

Sludge dewatering treatment is the important stage of urban sewage, water plant sludge water, industrial and agricultural waste treatment engineering. it can not lnlly creates social and economic benefit, but also reduces pollution emissions.

### 典型应用 Typical applications

- 工艺用水处理 Treatment of process water
- 淤泥脱水 Dewatering of sewage sludge
- 饮用水处理 Treatment of drinking water
- 工业及市政废水处理 Treatment of municipal and industrial waste water
- 回收可重复利用物  
Recovery of reusable materials from production flows and sewage sludge



## 行业应用

## APPLICATIONS

### 5. 化工 Chemical Technology

在化工行业，对分离机的性能具有严格要求，浓酸或浓碱、高温以及强度磨损都对机械提出了最大的挑战。安全性最为重要。根据特定的产品、温度和介质选用专用特殊材料。符合高要求的气密、防爆型分离机，在化学工业中至关重要。通过数十年的积累，华鼎企业能够为客户定制合适的离心分离机，保证机器的可用性、适用性。

In the chemical industry, the performance of the separator has strict requirements, concentrated acid or concentrated alkali, high temperature and strength wear on the machinery of the biggest challenge. Choose special materials based on specific products, temperature and media. Meet the high requirements of the airtight, explosion-proof separator, in the chemical industry is essential. With the accumulation of ten years, Huading enterprises can customize the appropriate centrifugal separator, to ensure machine availability, applicability.

#### 典型应用 Typical applications

- |  |  |
|--|--|
| ■ 醛类, 醇类 Aldehydes, alcohols                         | ■ 碱液 Lyes                                  |
| ■ 氢氧化铝 Aluminum hydroxide                            | ■ 荧光粉 Phosphors                            |
| ■ 硫酸钡 Barium sulphate                                | ■ 溶剂回收/澄清 Solvent recovery / clarification |
| ■ 回收碱金属盐(锅炉灰渣) Recovery of alkali salts (boiler ash) | ■ 石化添加剂 Petrochemical additives            |
| ■ 纤维素衍生物 Cellulose and derivatives                   | ■ 农药 Pesticides                            |
| ■ 印刷颜料、墨水 Printing colours, ink                      | ■ 有机酸和无机酸 Acids (inorganic and organic)    |
| ■ 涂料、油漆、树脂 Paints, lacquers, resins                  | ■ 粘胶, 醋酸纤维素 Viscose, cellulose acetate     |
| ■ 化妆品及卫生用品 Cosmetic and hygiene products             | ■ 乳胶 Latex                                 |



### 6. 食品 Food Technology

食品是人类赖以生存的物质基础。现代的食品工业对食品加工设备的要求十分苛刻。离心分离设备在食品加工中扮演着不可或缺的角色。密闭的分离环境，全自动生产作业，可连接CIP等特性让离心分离设备在食品行业中的应用愈发广泛。

Food is indispensable to human survival, the processing equipments in modern food field has very strict requirement for sanitation. Centrifugal separation equipment in food field plays a crucial role. closed environment, fully automatic operation, CIP connectable and other features make centrifugal separation equipments have widely used in food industry.

#### 典型应用 Typical applications

- |                              |              |
|------------------------------|--------------|
| ■ 油脂 Oils and fats           | ■ 蛋白 Protein |
| ■ 发酵行业 Fermentation industry | ■ 酵母 Yeast   |
| ■ 淀粉 Starch                  |              |



### 7. 能源 Energy

可靠，符合成本效益的能源供应，资源的高效利用，保证了我们所有人的生活质量和经济增长。不间断的能源供给要求系统运行无故障，有效和可靠地运行。华鼎离心分离设备是对未来能源供应需求的一个贡献。

Reliable, cost-effective energy supply, efficient use of resources ensures the quality of life and economic growth of all of us. Uninterrupted energy supply requires the system to operate without trouble, effectively and reliably. Huading centrifugal separation equipment is an important contribution to the future demand for energy supply.

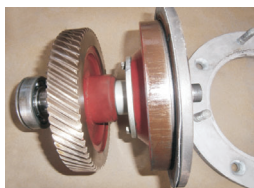
#### 典型应用 Typical applications

- |  |
|--|
| ■ 生物柴油与生物酒精 Biodiesel and bioethanol   |
| ■ 柴油机和燃气涡轮用燃油的处理和维护 treatment and maintenance of combustible fuels for diesel and gas turbines |
| ■ 润滑油的处理和维护 The treatment and maintenance of lubricating oils                                  |
| ■ 油、水和固态物质的处理 The treatment of oil, water and solid mixtures                                   |
| ■ 含油废水的处理 The treatment of waste water containing oil  |



## 行业协作

## ORIGINAL MANUFACTURER SERVICE



竭诚为进口、国产分离机用户提供零部件、调试、维修、维护、培训等专业优质服务。  
Field service, repairing, training, original spare parts, condition monitoring are available.



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