

DISC STACK CENTRIFUGE



PURIFICATION

CONCENTRATION

CLARIFICATION



About Us

Innova Bio-Meditech is one of the professional solution provider of laboratory and medical devices. Firmly committed to our mission of “sharing innovative bio-meditech solutions with the world”, we are dedicated to innovation in the fields of Biology Project, Life Science, Pharmacy Industry and Medical Treatment.

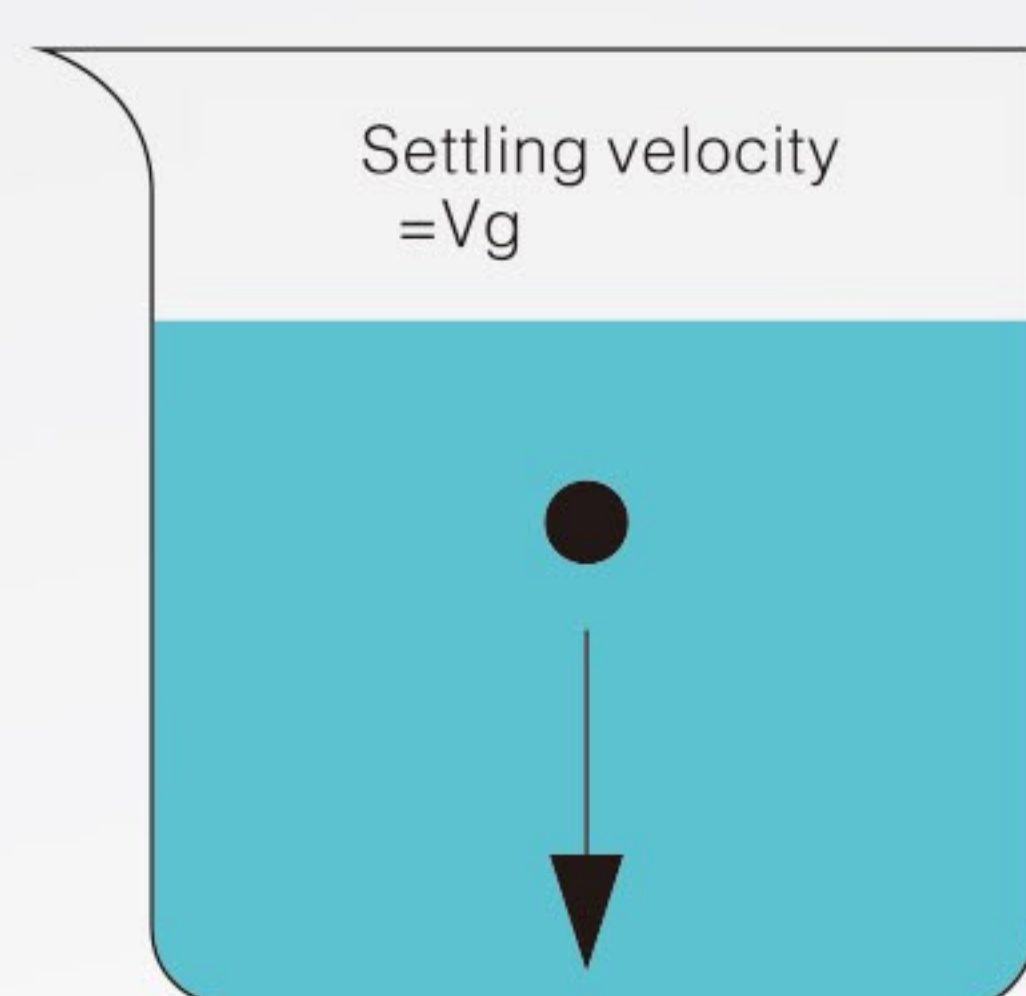
Innova Bio-Meditech possesses a sound distribution and service network with business partners in North and Latin America, Europe, Africa and Asia-Pacific etc. We have built up a well established R&D, manufacture network with 3 centers in Qingdao, Shanghai and Suzhou. Inspired by the needs of our customers, we adopt advanced technologies and transform them into accessible innovation. This means constant effort and research, in order to more fully understand the developments of the market, INNOVA produce constantly upgraded product ranges by adding new products year after year.

The passion for science



CENTRIFUGAL SEPARATION PRINCIPLE

1. Gravity settling & centrifugal settling



Gravity separation
Driving force $1g$

Stokes' Law

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

V_g = Gravitational settling velocity(m/s)

d = Particle diameter(m)

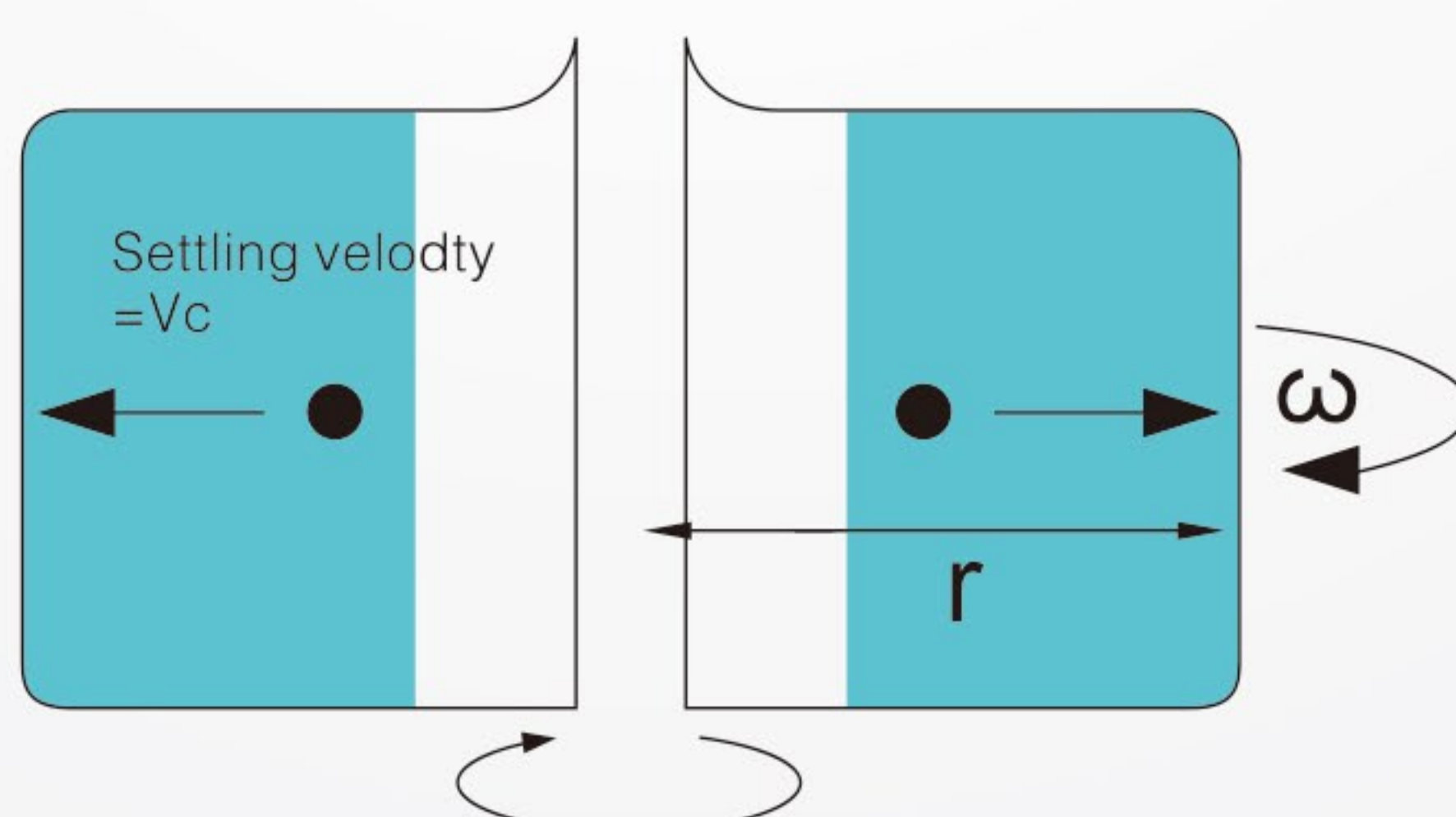
ρ_p = Particle density(kg/m³)

ρ_l = Liquid phase density(kg/m³)

η = Liquid phase viscosity(kg/ms)

g = Gravitational acceleration(m²/s)

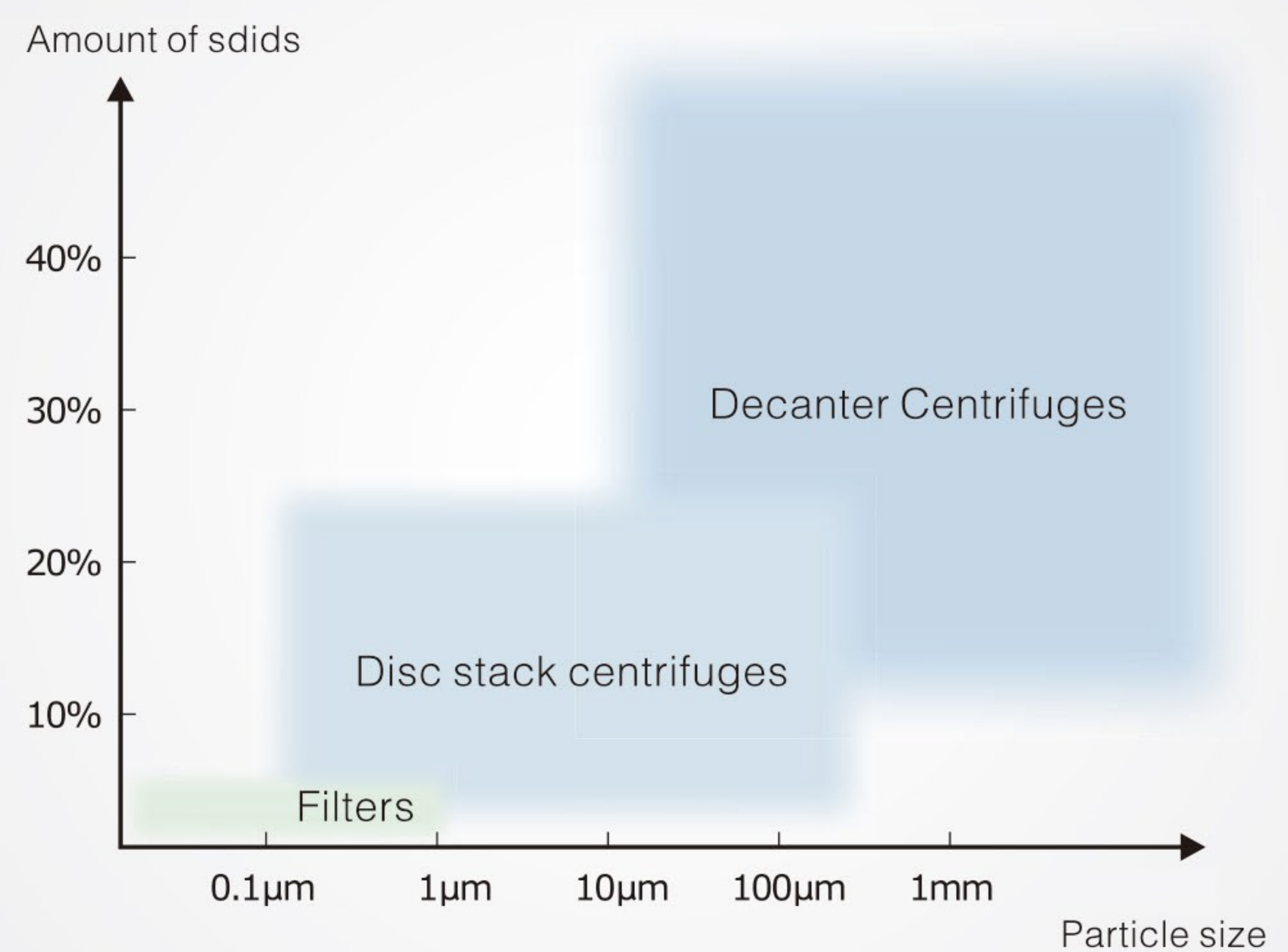
18 = Constant



Centrifugal separation
Driving force $r\omega^2$

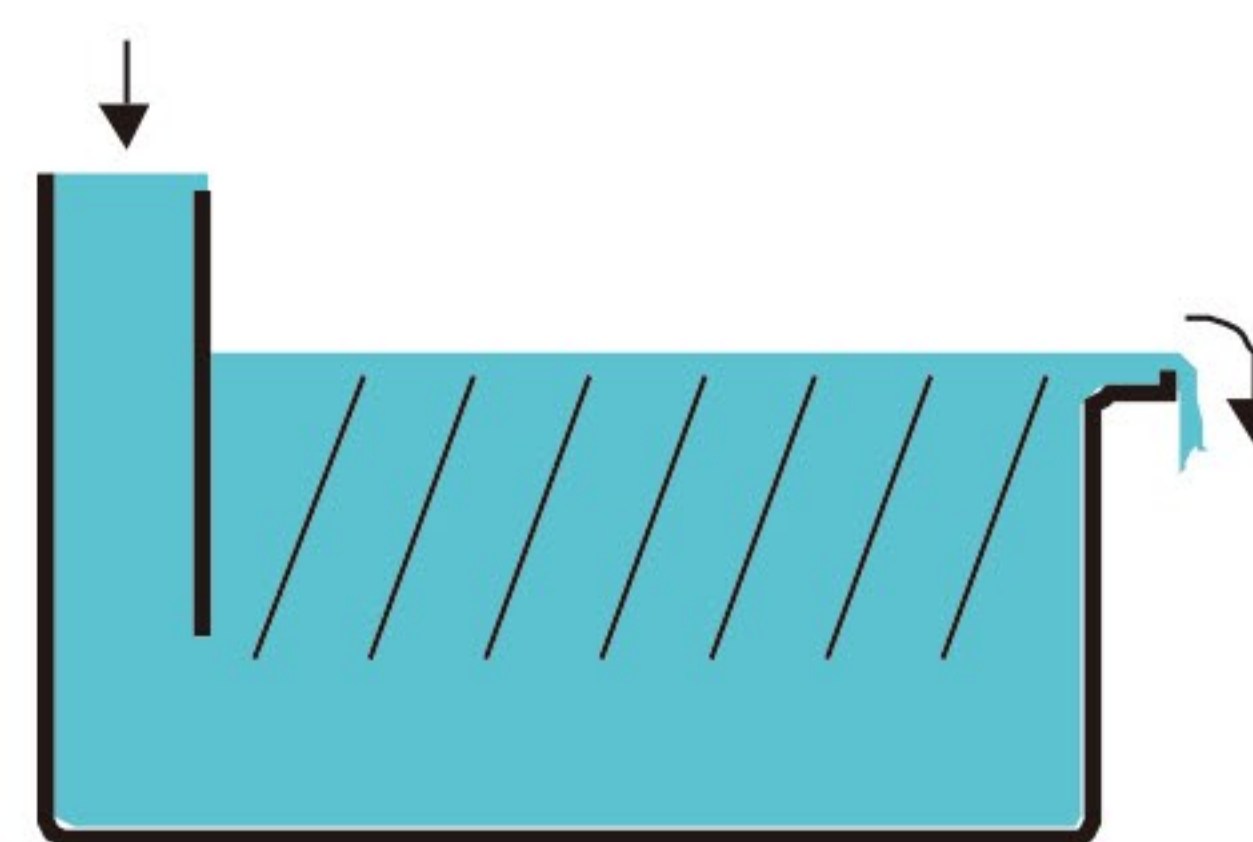
$$V_c = \frac{d^2 (\rho_p - \rho_l)}{18\eta} r\omega^2$$

2. Application scope of centrifugal separation equipment

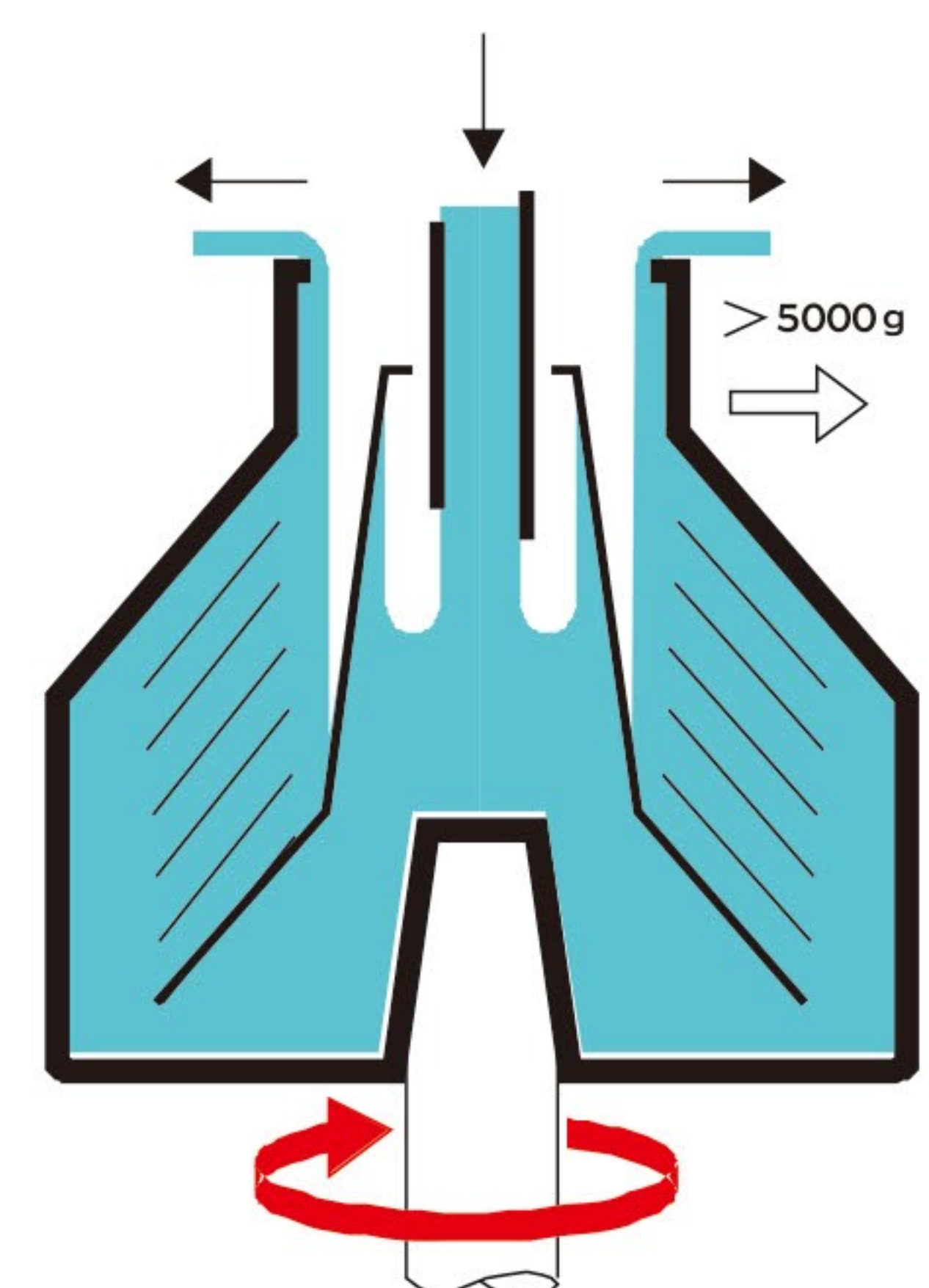


3. From gravitational separation to centrifugal separation

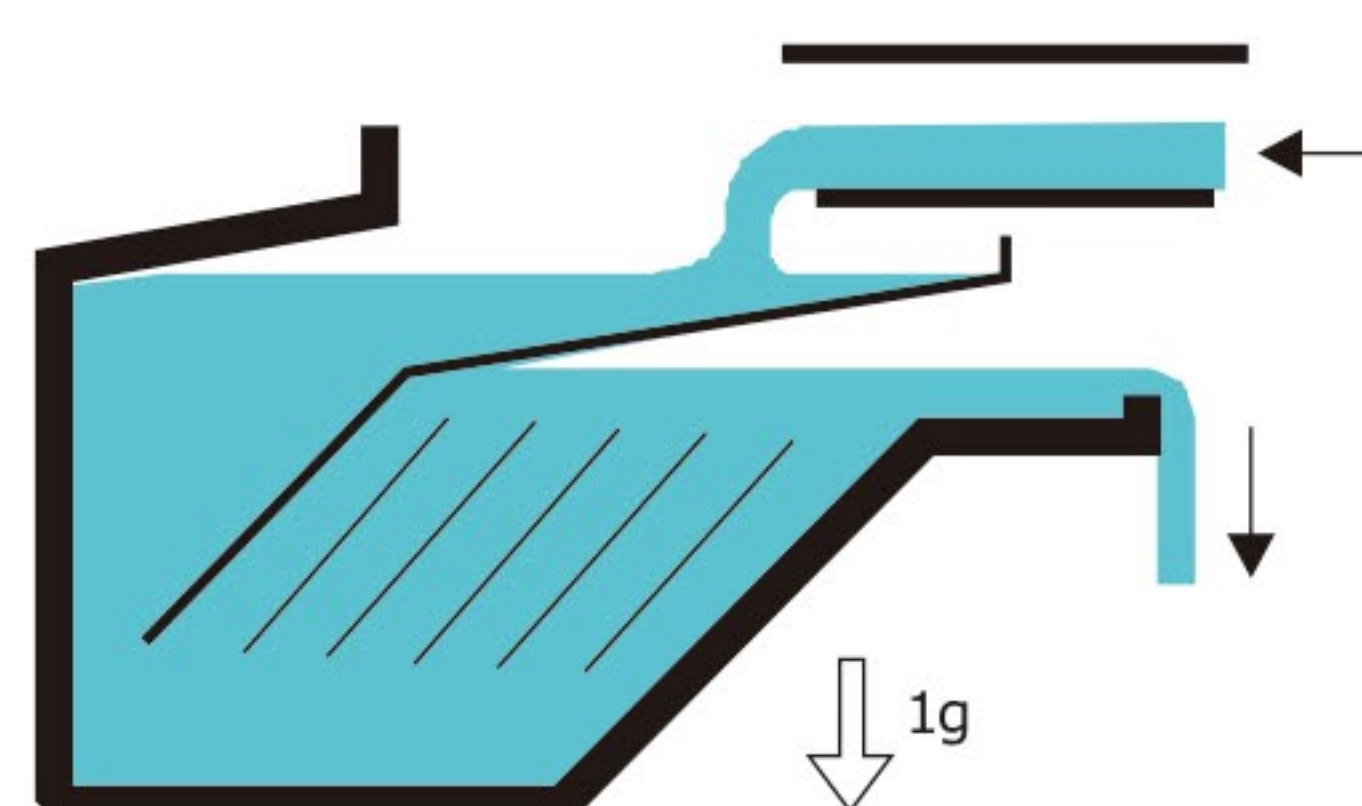
(1).



(3).



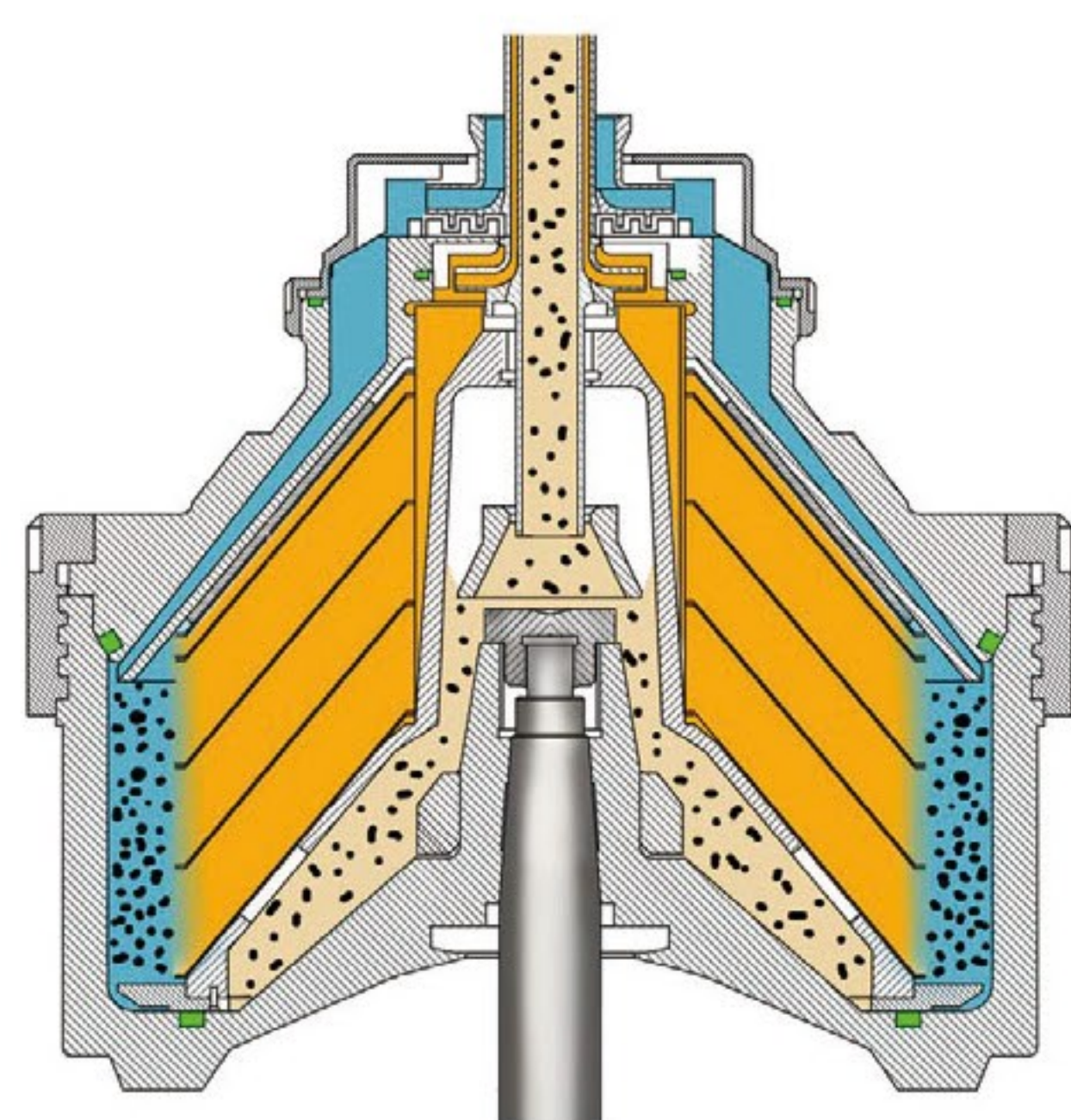
(2).



EQUIPMENT SCHEMATIC

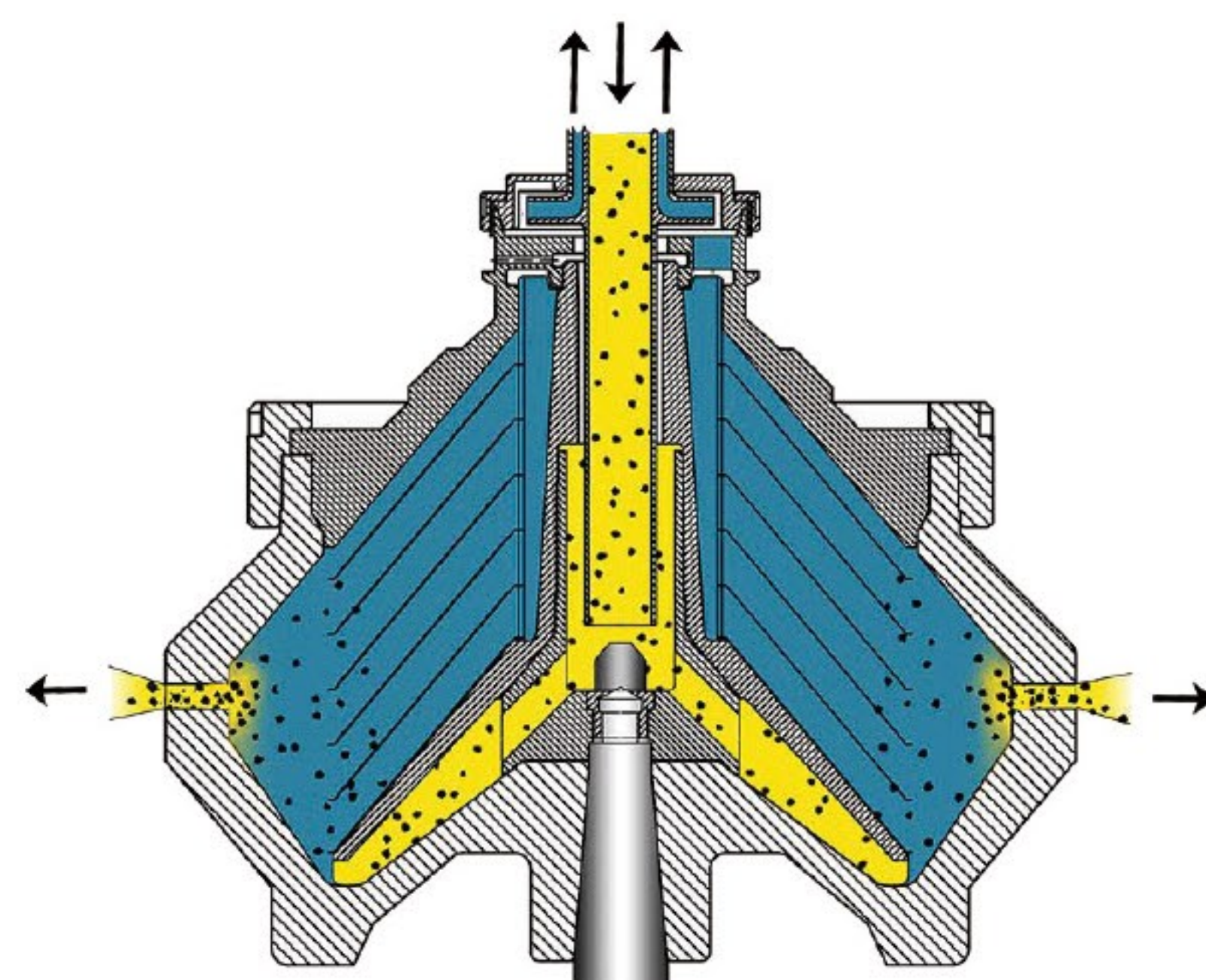
Disc stack centrifuge

1. Solids retaining type



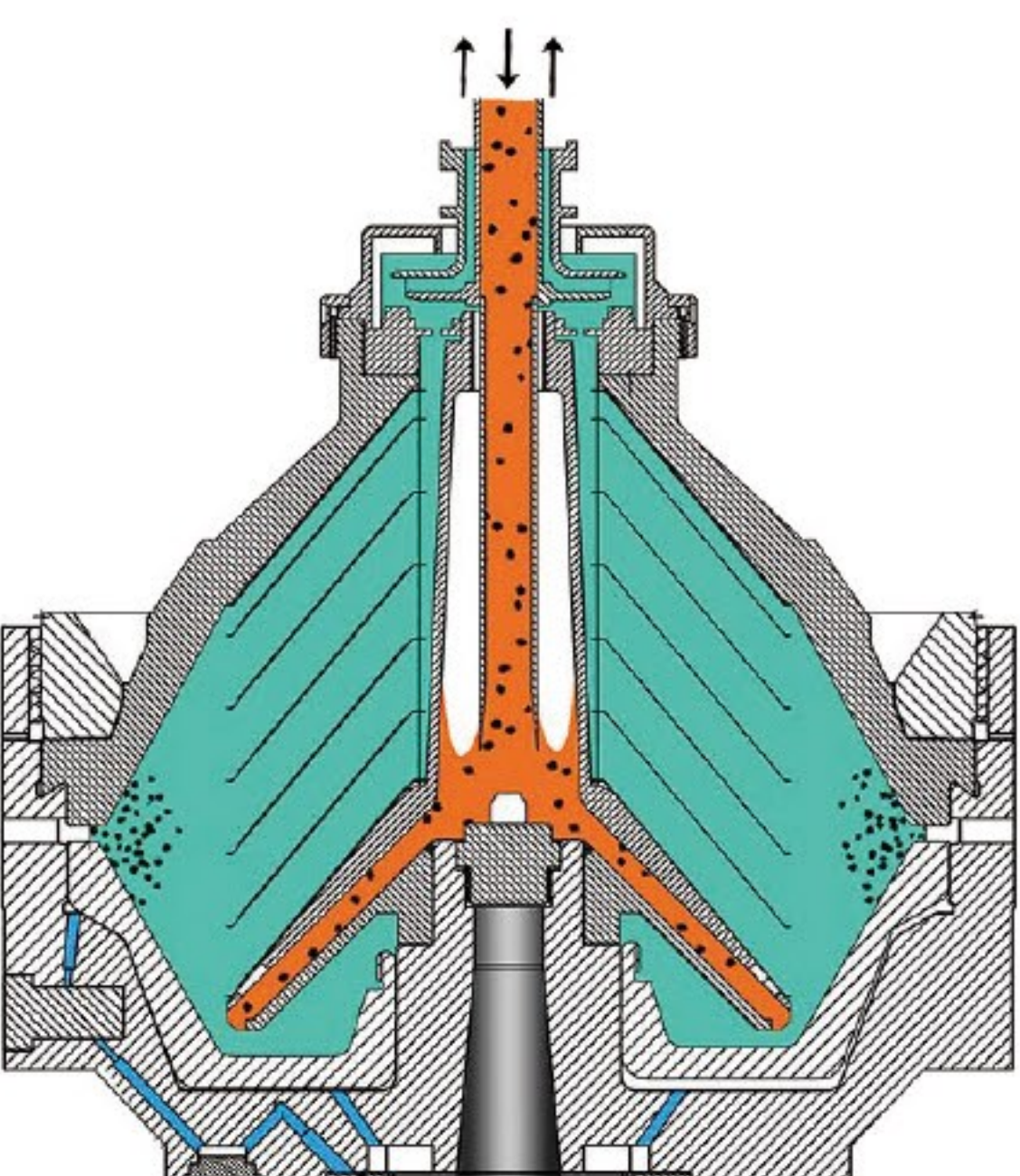
- Solid wall, used when the solids content is low <0.5%.
- Manual removal of solids.

2. Nozzle type

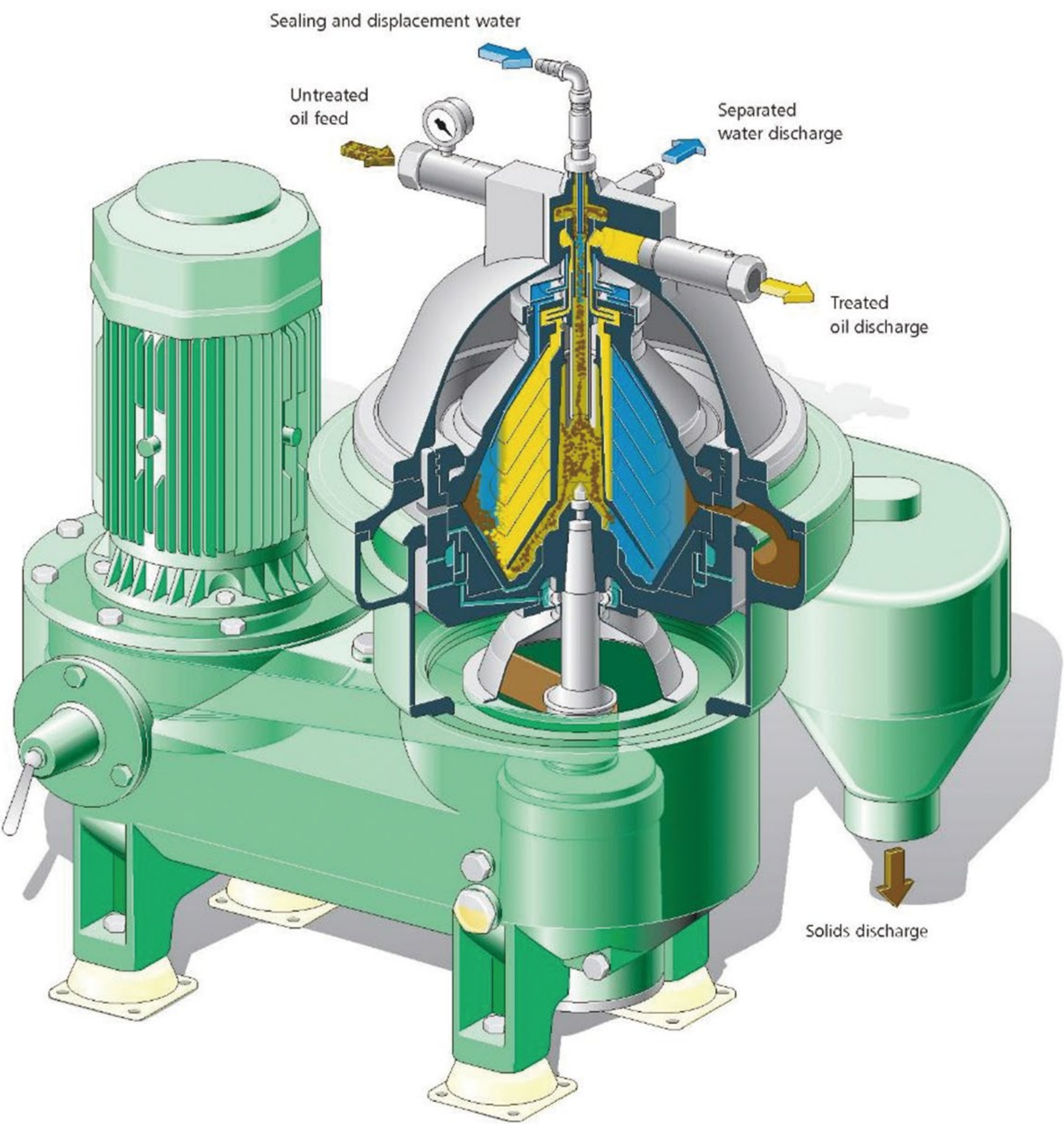


- Used when the solids content is <35%.
- Solids discharge continuously.

3. Solids ejecting type



- Used when the solids content is <10%.
- Automatic operation. Solids discharged intermittently.



APPLICATIONS

1. Dairy & Beverage Technology

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 alrgeest 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.

Typical applications

■ Skimming / clarification/ bacteria removal / concentration

■ Beer

■ Wine, sparkling wine and champagne

■ Citrus juice

■ Premium juice from fruits, berries,vegetables and herbs

■ Base materials for soft drinks

■ Essential oils

■ Coffee

■ Tea

■ Soy drinks

■ Cereal drinks



2. Herb & Plant Extraction

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 Innova Separator are widely used in these processes.

Typical applications

■ Tea

■ Ginkgo biloba

■ Radix isatidis

■ Salvia

■ Shuanghuanglian

■ Rutin

■ Loquat leaf

■ Mangosteen

■ Kaempferol

■ Honeysuckle

■ Amygdalin

■ Licorice

■ Stevia

■ Mulberry



3. Pharmaceutical Technology

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, Innova Separator stands for reliable compliance with these requirements.

Typical applications

■ Human vaccines and veterinary vaccines

■ Insulin from biomass

■ Enzymes

■ Starter cultures (bacteria cultures)

■ Human blood proteins

■ Synthetic pharmaceutical products

■ Animal cell cultures

■ Vitamin

■ Antibiotics

■ Hormone



4. Biological Fermentation

In the process of biological fermentation, in order to obtain higher yield or purify microorganisms as much as possible, multi-stage treatment including washing and separation is often adopted.

Typical applications

■ Yeast extraction

■ Algae

■ Bacteria

■ DNA&RNA

■ Cell protein

■ Biomass



APPLICATIONS

5. Chemical Technology

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, Innova enterprises can customize the appropriate centrifugal separator, to ensure machine availability, applicability.

Typical applications

- | | |
|---|------------------------------------|
| ■ Aldehydes, alcohols | ■ Lyes |
| ■ Aluminum hydroxide | ■ Phosphors |
| ■ Barium sulphate | ■ Solvent recovery / clarification |
| ■ Recovery of alkali salts (boiler ash) | ■ Petrochemical additives |
| ■ Cellulose and derivatives | ■ Pesticides |
| ■ Printing colours, ink | ■ Acids (inorganic and organic) |
| ■ Paints, lacquers, resins | ■ Viscose, cellulose acetate |
| ■ Cosmetic and hygiene products | ■ Latex |



6. Food Technology

Food is indispensable to human survival. the porcessing equipments in morden food field has very stricy 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.

Typical applications

- | | |
|-------------------------|-----------|
| ■ Oils and fats | ■ Protein |
| ■ Fermentation industry | ■ Yeast |
| ■ Starch | |



7. Enrgy

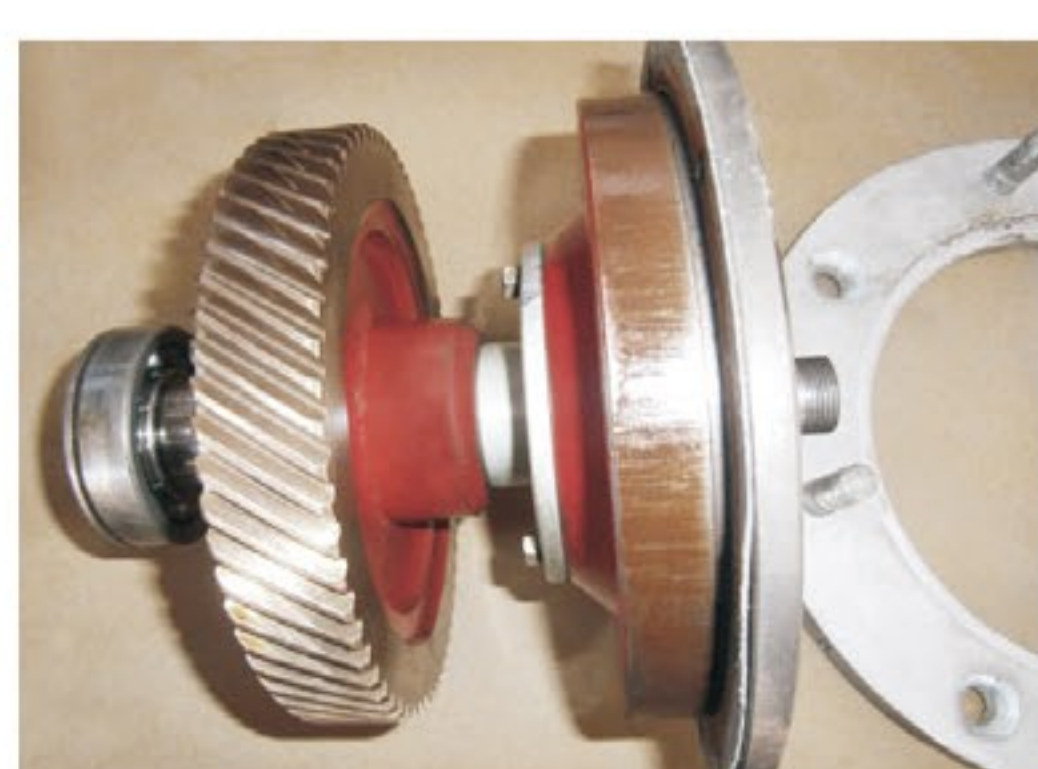
Reliable, cost-effective energy supply, efficient use of resources ensures the quality of life and economic growth of all of us. Uninterrupted energy supply requires the system to operate without trouble, effectively and reliably. Innova centrifugal separation equipment is an important contribution to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

Typical applications

- Biodiesel and bioethanol
- Treatment and maintenance of combustible fuels for diesel and gas turbines
- The treatment and maintenance of lubricating oils
- The treatment of oil, water and solid mixtures
- The treatment of waste water containing oil



ORIGINAL MANUFACTURER SERVICE



Field service, repairing, training, original spare parts, condition monitoring are available.



Professional Solution Provider of Laboratory/Pharma Equipment

Water Purification System

Freeze Dryer/Lyophilizer

Biosafety Cabinet/Laminar Flow

Biofermentation Solution

Shaking Incubator/Shaker

Cold Storage Solution

Glassware Washer

Incubator

Climate Chamber



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