



# CENTRIFUGE TECHNOLOGIES

FOOD AND BEVERAGE







# Boost The Purity Of Your Product

*Centrifuge technologies including decanters and separators play a crucial role in food and beverages processes for preparation of ingredients, production process itself, purification of products, recovery of co-products from processing wastes and treatment of waste streams.*

*Polat Makina offers centrifugal separators and decanters to match the demands of food and beverage industry. Thanks to our centrifuge technologies, you can reach higher product quality.*

## *Primary usage areas of decanter and separator in food and beverage industry*

- Fruit and Vegetable Juice •*
- Starch and Yeast Additives •*
- Alcoholic Drinks (Wine, Beer, etc.) •*
- Alcohol-free Beverages •*
- Separation of Edible Oils •*



# Advantages of Polat Makina

- High product yield with high product quality
- Low utility consumption
- Suitable surface roughness on the surfaces in contact with the product
- Long uptime
- High clarification efficiency
- Hygienic components and materials specialized for food
- High reliability of the decanters, separators and clarifiers
- Eliminates the contamination with CIP-system integration
- Whole integration into your SCADA system with our programmable PLC system
- Quick access to your equipment by remote control
- Easy to reach to the service supported from a global service network



“Focus on Performance  
with Polat Makina”





## S SERIES

- High performance with minimum water consumption
- Low energy consumption and carbon footprints
- Low maintenance costs
- 2-3 phase working option
- Hygienic components and materials specialized for food

## CIP CAPABLE SYSTEM

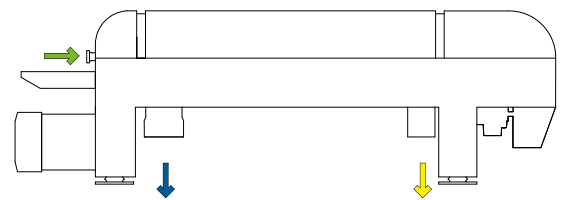
- Low energy consumption and carbon footprints
- Low maintenance costs
- %100 CIP capable
- Does not leave product residue and chemical residue after CIP application
- Minimum loss of cip liquids
- Different types of liquids option for cleaning
- 2-3 phase working option

## IMPELLER DESIGN SYSTEM

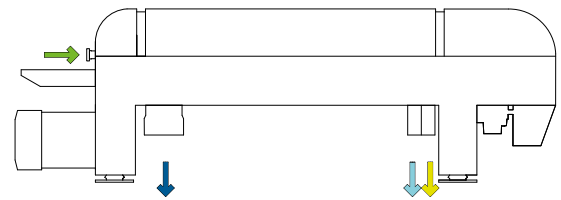
- High performance with minimum water consumption
- Low energy consumption and carbon footprints
- Low maintenance costs
- 2-3 phase working option
- Impeller design\*
- Hygienic components and materials specialized for food



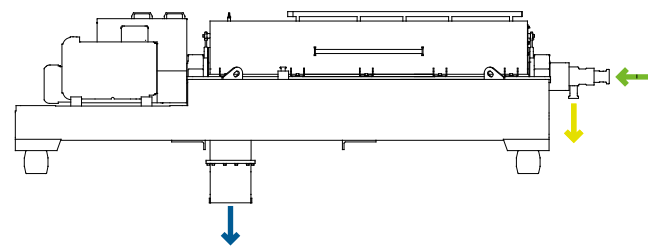
## Product Input and Solid & Liquid Output



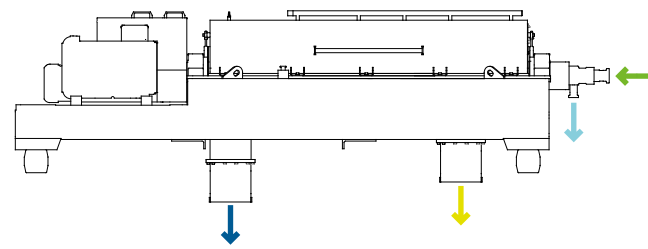
- Product input
- Solid phase output
- Liquid phase output



- Product input
- Solid phase output
- Heavy liquid phase output
- Light liquid phase output

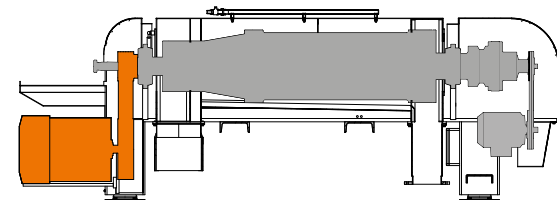


- Product input
- Solid phase output
- Liquid phase output

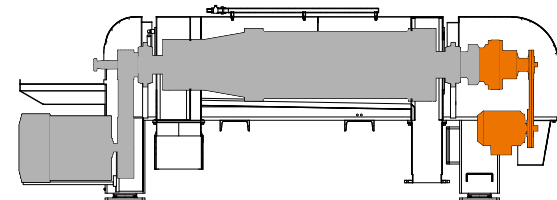


- Product input
- Solid phase output
- Heavy liquid phase output
- Light liquid phase output

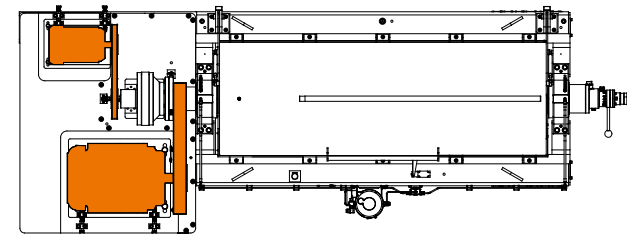
## Motor & Transmission



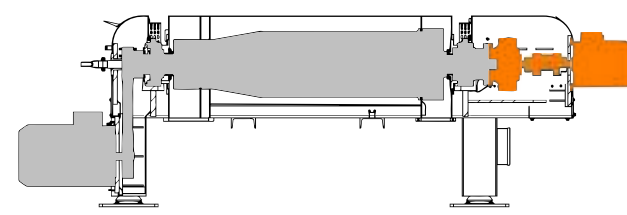
Ability to adjust the desired "G" force according to the product



Optimum operation with automatically adjustable differential speed

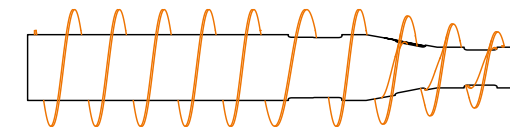


Easy maintenance and repair

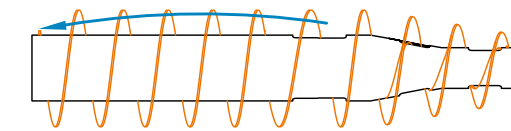


Transmission rate with coupling

## Scroll Flights

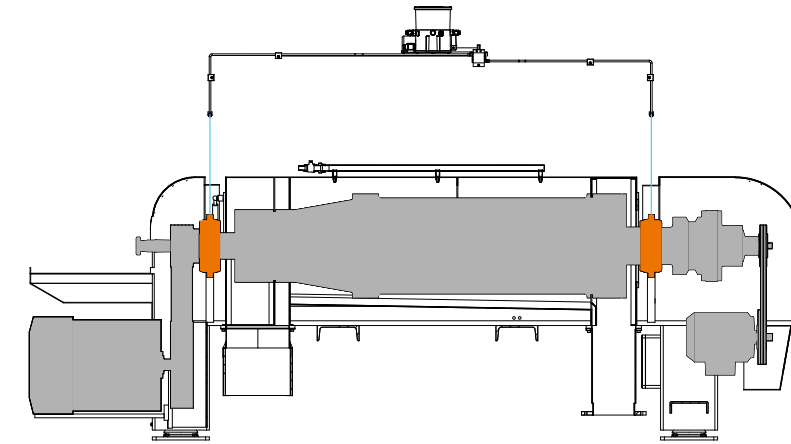


01 Single Flight System

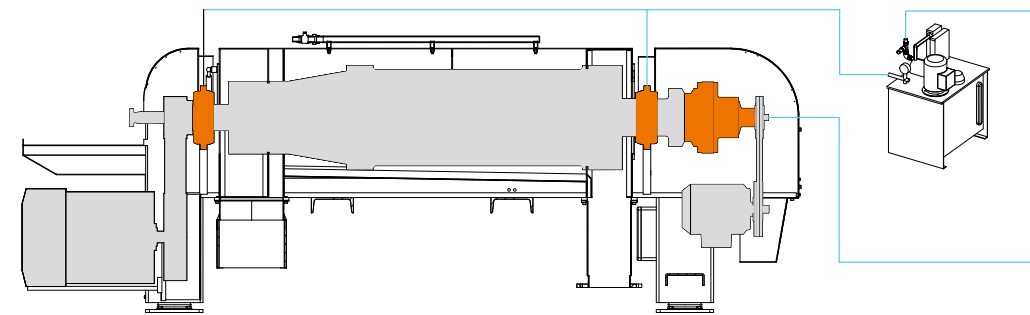


02 Under Open Flight System

## Lubrication

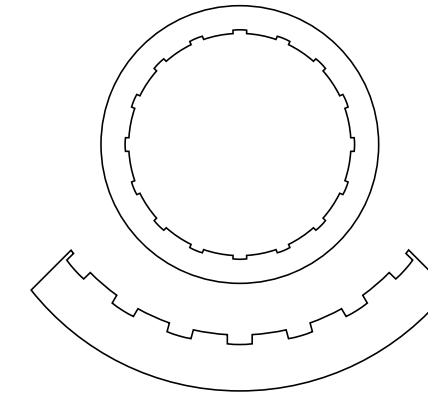


GREASE LUBRICATION SYSTEM



LIQUID OIL-COOLING LUBRICATION SYSTEM

## Bowl



Grooved Bowl

Models	Bowl Motor (kW)	Scroll Motor (kW)	Drive System	Approx Weight (kg)
S 200	5,5	2,2	VFD	500
S 300	15	4	VFD	1160
S 350	22	5,5	VFD	1850
S 430	37	7,5	VFD	3500
S 470	45	7,5	VFD	4700
S 530	55	11	VFD	5475
S 570	75	11	VFD	6250
S 670	90	22	VFD	10980
SX 840	132	45	VFD	15000





#### Material Options:

-AISI 304  
-AISI 316

#### Material Options:

-AISI 316  
-Duplex 1.4462

#### Material Options:

-Duplex 1.4462/1.4470

#### Material Options:

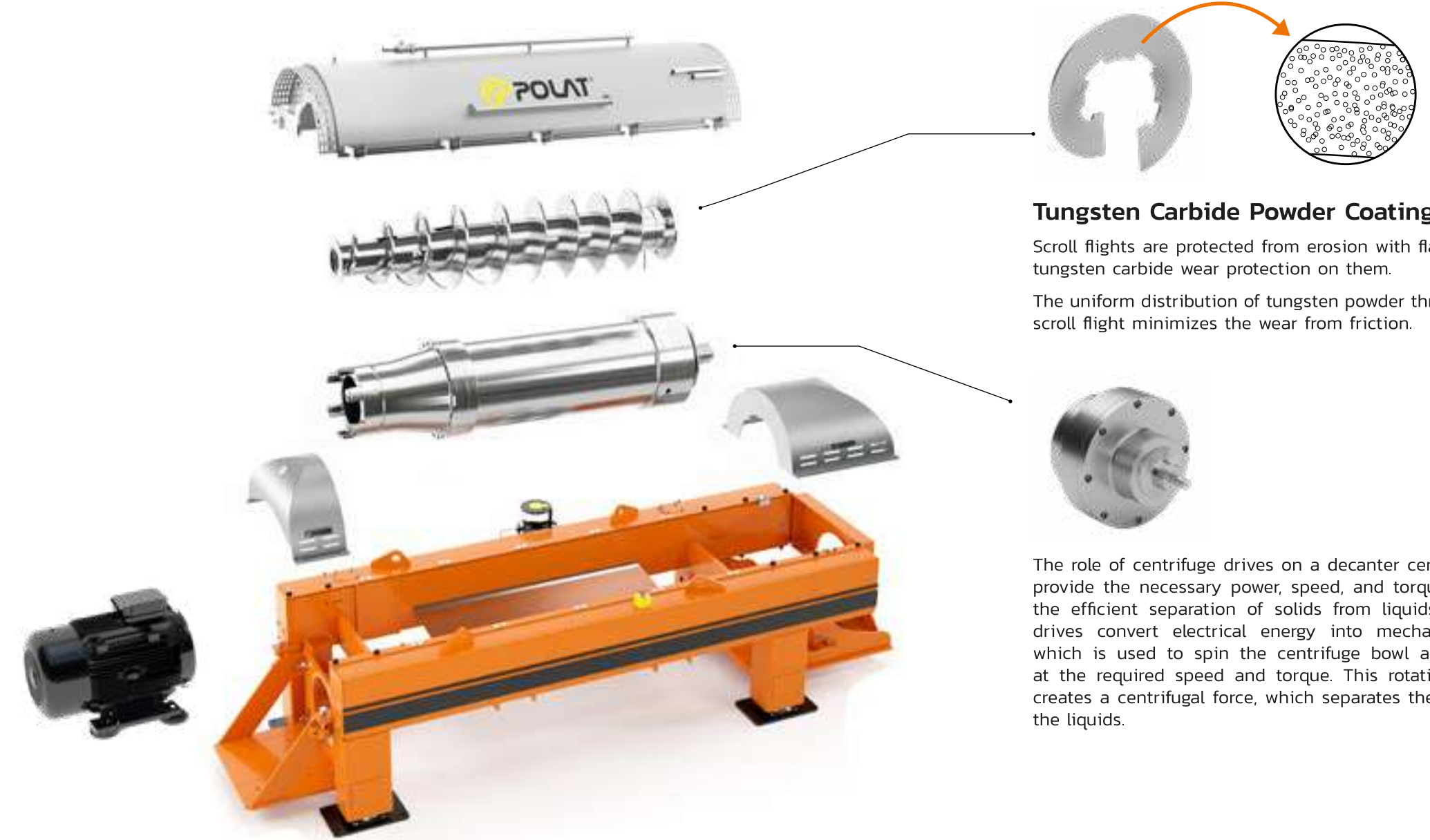
-AISI 304  
-AISI 316

#### Material Options:

-S235

#### Material Options:

-AISI 304  
-AISI 316



# OPTIONAL FEATURES

*We offer innovative and sustainable solutions for the customer needs with our approach focused on continuous improvement by using our technological infrastructure*



**SCADA Adaptation**  
System adaptation



**Slide Gatevalve**  
Block fluid flow to prevent leakage to solid output



**Static Mixer**  
Continuously mixes the fluid material, without moving component



**Exproof**  
In environments which explosive and/or flammable powder and gas exists, protecting against explosion



**Supply Pump**  
Product supply with variable flow rate with speed control



**Remote Control**  
Monitoring your decanter's performance with mobile equipments, and intervention when necessary



**Container System**  
Mobility for working in different locations



**Flowmeter**  
Product and capacity monitoring, observing total processed amount



**Manometer**  
Monitoring the pressure inside the decanter, ensuring optimal performance and preventing damage



**Macerator**  
Equipment to break particles from the decanter feed line to protect the machine



**Cyclone**  
Removes gas, vapor and odor from liquid output

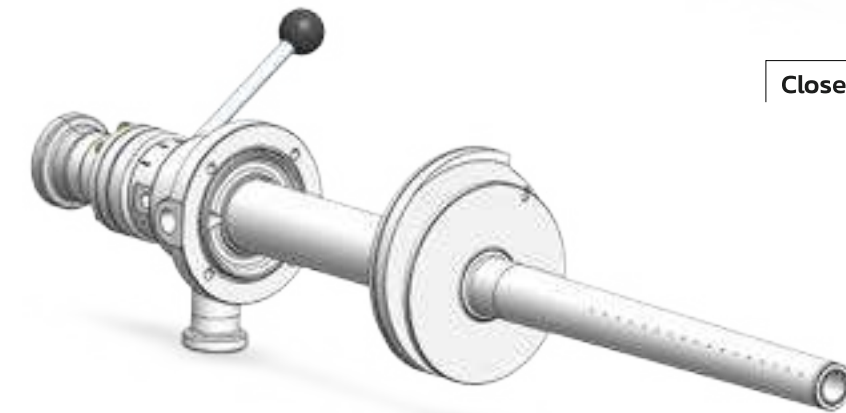
\* Sampling, stripper, scroll conveyor, control panel, CIP, transmission, UPS, lubrication, and replaceable wear part on bowl discharge are offered as standard features.

## Impeller System

During the operation of the decanter, the optimal phase level is adjusted continuously throughout the process. This adjustment ensures the intake of the liquid phase for machines working with two phases and the intake of the light liquid phase for machines operating with three phases. The system operates using an adjustment lever.



Open Impeller



Closed Impeller

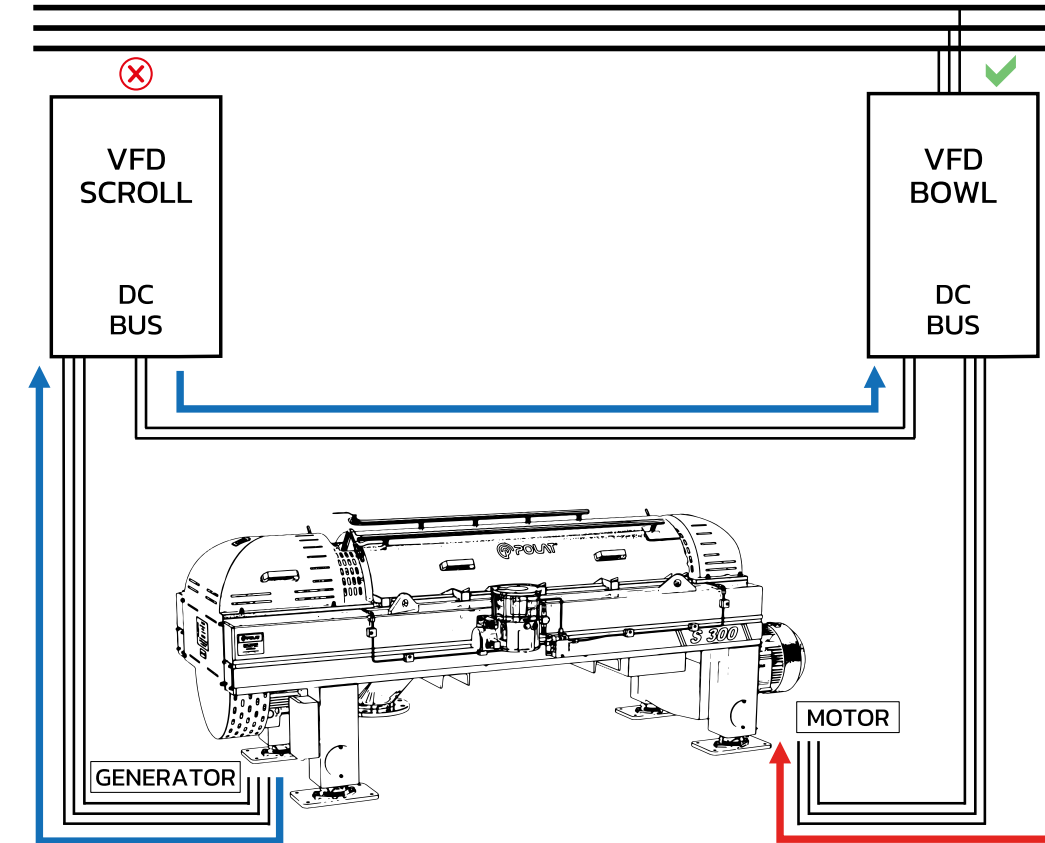




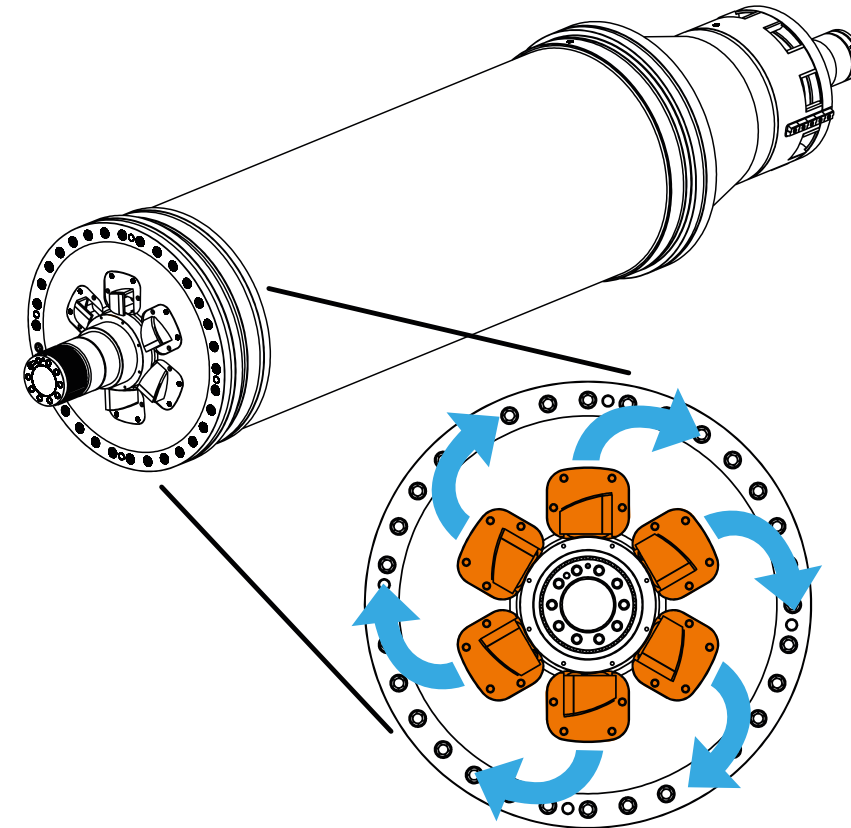
## Design for Low Energy Consumption

Our high-performance decanter centrifuges are equipped with a unique and innovative system for driving the rotating assembly. The system consists of two motors – a main and a secondary motor – each of which is controlled by a variable frequency drive (VFD). This system allows for independent control of the bowl speed and the scroll speed, resulting in precise and efficient separation of solids from liquids.

One of the key advantages of this system is its energy efficiency. The energy required to convey solids is recycled by inverters and fed to the main engine, reducing power consumption by up to 40% compared to standard systems. This not only results in cost savings but also reduces the environmental impact of the centrifuge.



❌ The motor is not powered from the mains    ✅ The motor is powered from the mains



Through redirecting the movement of fluid having a certain speed in contra direction of the bowl's direction of rotation. This helps the bowl to rotate faster, and also saves by up to 20% of energy.

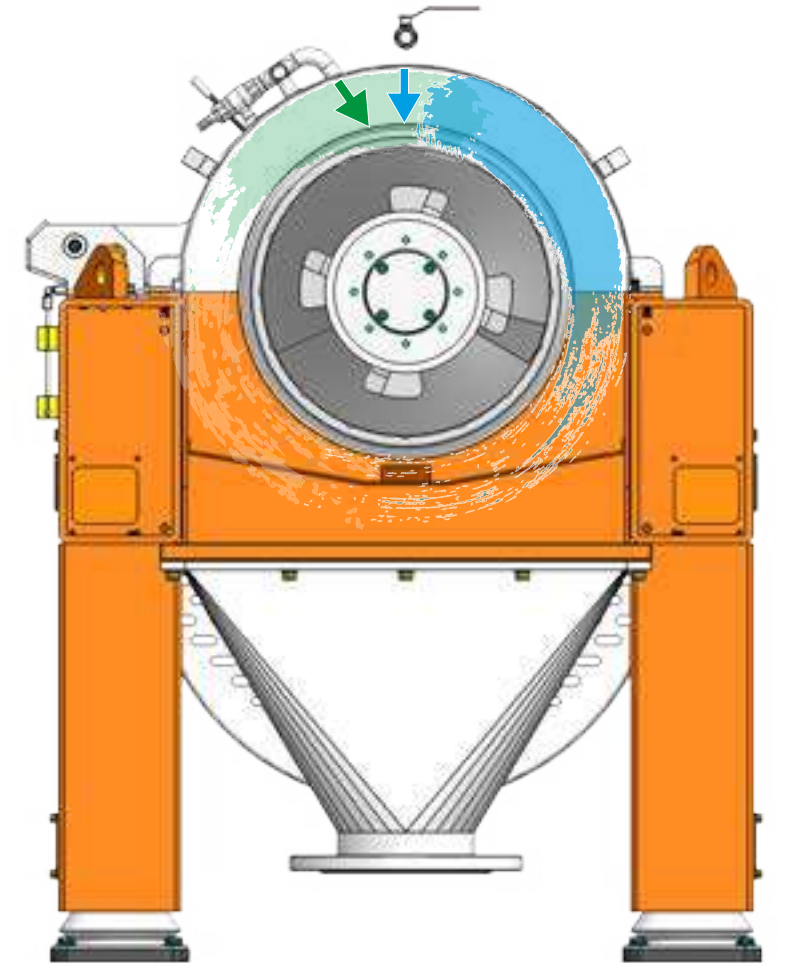
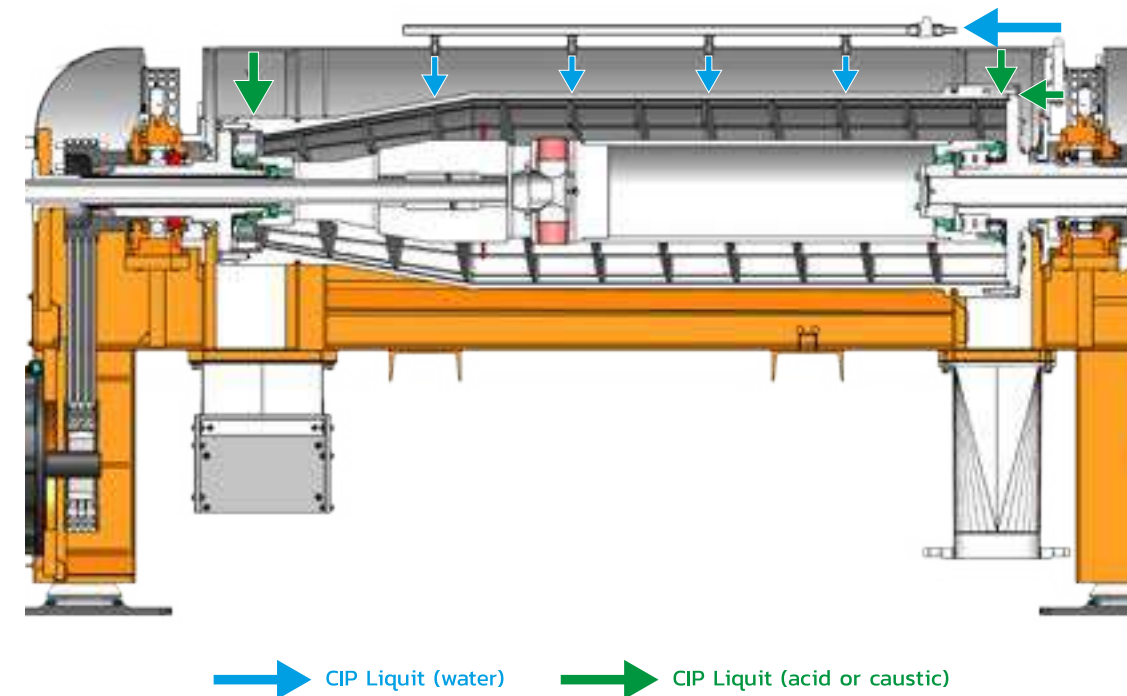


## CIP System

The CIP bar is installed on the cover and serves the purpose of distributing CIP liquid from the connection point to the spray nozzles and rotary heads.

The CIP liquid effectively covers and moistens not only the cover and casing but also the bowl and outlets in all three compartments: solids, neutral (middle), and liquid compartments.

To ensure optimal performance, it is crucial that the CIP liquid entering the system is filtered or free from any foreign particles. This precaution helps prevent the nozzles and spray heads from getting clogged, thus maintaining their efficiency.







# 5 continents 44 countries

Group companies in 3 countries  
Dealership, distributorship and agency in 14 countries.

### Group Companies

Italy  
Greece  
Morocco

### Dealer & Distributor & Agency

Germany	China	Egypt
Spain	Argentina	Tunisia
Belgium	Brazil	Jordan
Ukraine	Iran	(Middle East)
Russia	Malaysia	Algeria

### Exported Countries

U.S.A	Georgia	Uzbekistan	Tunisia
United Kingdom	Australia	Tataristan	Morocco
Italy	Albania	Iran	Sudan
Spain	Ukraine	Iraq	Libya
Belgium	Russia	Nicaragua	Lebanon
Slovakia	Azerbaijan	Kazakhstan	Palestine
Poland	Cyprus	Malaysia	Egypt
Greece	China	India	Syria
Romania	Kosovo	South Africa	Jordan
Germany	Argentina	Qatar	Ethiopia
Switzerland	Brazil	Saudi Arabia	Algeria

We are at your disposal **all around the World.**



# NEW BELT TRANSMISSION CX SERIES

High G Force For Best Separation  
With Belt Transmission

- High skimming performance,
- Low energy consumption and carbon footprints compare to gear drive transmission,
- Self-lubrication system of bearings,
- The self-air cooling system of mechanical transmission increases the life of the bearings and all components,
- Easy belt tensioning system,
- Low maintenance costs thanks to continuous operation, high-grade machine materials, smart design and well-thought preventive services,
- High reliability,
- Sanitary design,
- Low shear stress.

## PMS SERIES

- Bowl manufactured specially for higher strength and reliability,
- Bowl and disc geometry developed for maximum separation productivity,
- Minimum product loss with hydraulic discharge system,
- High quality stainless steel material in conformity with food law,
- Continuous process facility,
- Easy installation.

## TXB CLARIFIER SERIES

- High speed separation,
- High-performance separation,
- Low energy consumption and carbon footprints,
- Low maintenance costs,
- Prevents the contact of the product with oxygen thanks to a liquid barrier,
- Prevents the contact of the product with oxygen thanks to oxygen pick-up.

## C SERIES

- High speed separation,
- High-performance separation,
- Low energy consumption and carbon footprints,
- Low maintenance costs.

## BX SERIES

- High speed separation,
- High-performance separation,
- Low energy consumption and carbon footprints,
- Low maintenance costs.



Specifications

Materials

Rotating Parts	Bowl bottom	
	Bowl cap	Super martensitic stainless steel duplex
	Disc stack	
	Main shaft	Stainless steel or other alloys compliant to product and applications
Cover & Cyclone	Upper cover liquid and solid outlet chambers	Stainless steel
	Lower body	Frame iron casted by stainless steel coated
Wear Protection	Bowl / mobile parts	
	Solid outlet slots	Resistant to high corrosion Chemical compliant
Packing	Bowl, mobile parts	Resistant to high corrosion Chemical compliant

Lubrication

Automatic lubrication	Oil bath and splash lubrication Cooling system
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Movement system	Gear system
	Belt transmission

Layout	Oxygen pick-up
	Stainless or carbon steel chassis, equipped with control panel and auxiliary units
	Separator stainless and carbon steel elevation bar
	Shock absorber and fixing equipment are available in separators without assembly
	Liquid Barrier
	Turn-key systems

Automatic discharge



Automatic discharger separators are available with the following configuration

- A- Non skid base version
- B- Stainless or carbon steel skid
- C- Turn-key projects

Solid Discharge Configuration

Automatic

Solids start to accumulate from the inside of the bowl towards the outside during machine operation In automatic discharge system.

Separation Type

Clarifier

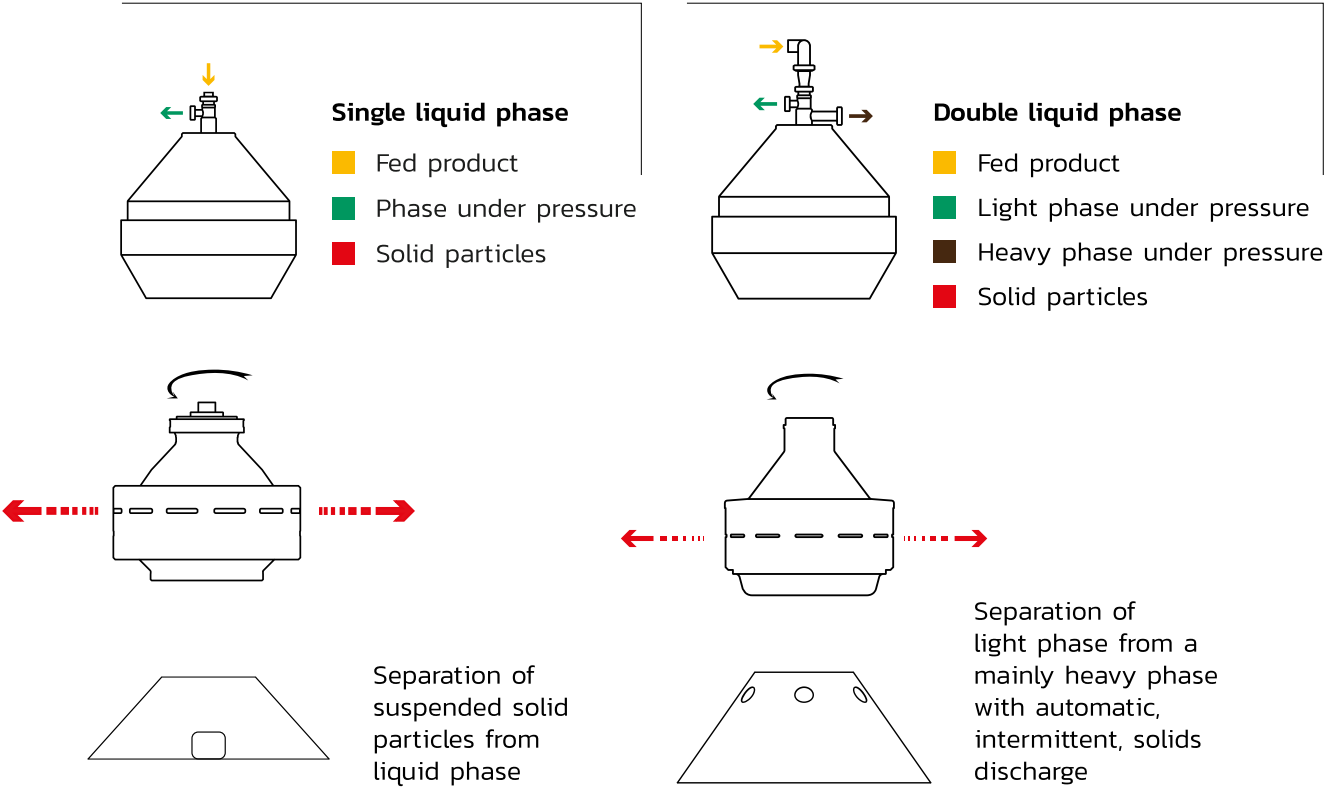
Separation of suspended solid particles from liquid phase

Purifier

Separation of heavy phase from a mainly light phase with automatic, intermittent, solids discharge

Concentrator

Separation of heavy phase from a mainly heavy phase with automatic, intermittent, solids discharge



Models	Milk Skimming Capacity (lt/h)	Whey Skimming Capacity (lt/h)	Standardization Capacity (lt/h)
CX3	3.000	3.000	4.500
CX4	5.000	5.000	7.500
CX5	10.000	10.000	15.000
CX6	15.000	15.000	20.000
CX7	20.000	20.000	25.000

Models	Hot Clarification (lt/h)	Cold Clarification (lt/h)
TX4	10.000	7.000
TX5	15.000	10.000
TX5L	20.000	13.000
TX6	25.000	20.000
TX6L	30.000	23.000

Models	Capacity (lt/h)
TX5B	15.000
TX6B	20.000
PMS305	500 – 1.000
PMS405	1.500 – 2.000
PMS505	3.000 – 3.500

Models	Capacity (lt/h)
BX5	10.000
BX6	15.000

\*Capasities may vary according to the configuration.



#### Material Options:

-AISI 316

#### Material Options:

-AISI 304

#### Material Options:

-Super Martensitic

#### Material Options:

-AISI 304

#### Material Options:

-AISI 304

#### Material Options:

-AISI 304

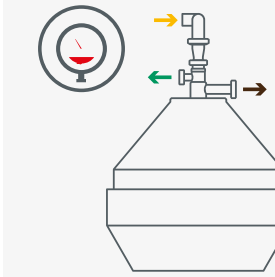
#### Material Options:

-AISI 304

## FEATURES

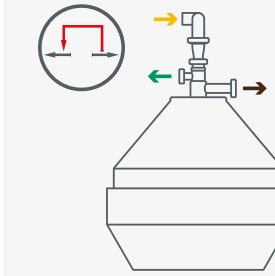
*We offer innovative and sustainable solutions for the customer needs with our approach focused on continuous improvement by using our technological infrastructure*

- Fed product
- Light phase under pressure
- Heavy phase under pressure



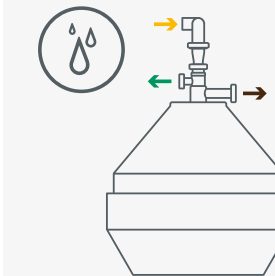
#### Back Pressure Valve

It helps to regulate back pressure on outlet lines



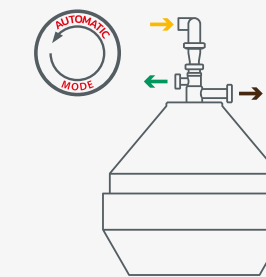
#### Manual Standardization Kit

It helps to regulate the fat ratio in the product coming out of the separator



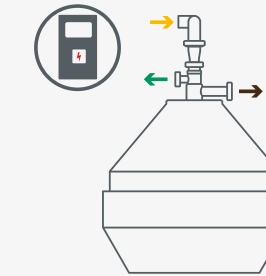
#### CIP Cleaning

Compliance with CIP cleaning system



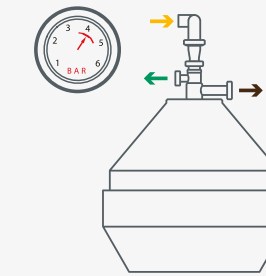
#### Automatic Solid Discharge

It helps to automatically conduct separator explosion process



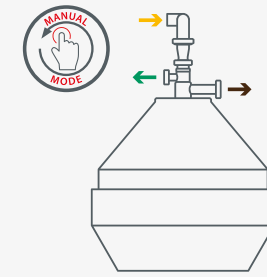
#### Control Panel

Optimum monitoring and operation with machine, safety equipment and other auxiliary equipment



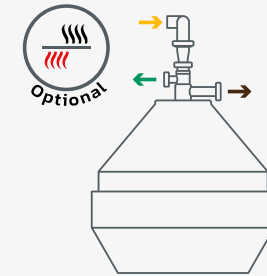
#### Separator Feed

It helps to operate at low feeding pressure



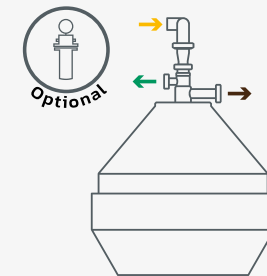
#### Manual Solid Discharge

It helps to manually conduct separator explosion process



#### Heating System

It helps to regulate the temperature of the fed product



#### Filtering Unit

It prevents feeding large solid materials in the supplied product into the separator



## 365 days 7/24 Service Excellence



*A fast service that reduce  
downtime to zero?*

The most important preference criteria for you is fast service and spare part solutions.

Polat Services provide a wide range of service without making distinctions between small and big machines.

Upon demand, periodic controls of process performance and mechanical conditions in customers' operations with service contracts and a flawless service is provided for supplying of original spare part and changing fields

*Yes, excellence is possible.*



Who we are?

Having been laid the foundations in 1978, Polat Makina aims to improve constantly and provide products and services in global-scaled quality and standards with its employees.

It continues its journey which had began in an atelier for 4,5 m² by exporting the values manufactured in an area for 88,000 m² for 44 countries in today's world. Polat Makina is a subsidiary of Polat Group Holding, which has 13 group companies, 4 of which are located abroad, in Italy, Germany, Greece, and Morocco.

Our values

*We prioritize creating value for our customers, meeting their expectations in company with quality and stability, looking after our products and being there for our customers aftermarket process. We aim to realize a corporate management faithful to the values such as modesty, human and endeavor, public closeness and social responsibility awareness. Another fundamental principle which we prioritize is to fulfill our responsibilities for today's world and future generations.*

Eco-friendly

*As a responsible corporate entity, Polat Makina is committed to reducing its environmental impact through eco-friendly policies and practices. We understand the urgent need to address climate change and its impact on our planet. Our eco-friendly policy includes reducing our carbon footprint by using renewable energy sources, reducing waste, and recycling materials.*

*We also encourage sustainable transportation and use of energy-efficient appliances. Our commitment to eco-friendly practices extends to our supply chain, where we work with our suppliers to ensure they also follow eco-friendly policies. We believe that every action we take towards sustainability can contribute to a greener future for our planet.*

Commitment to Human Rights

*Our company is committed to promoting and protecting human rights in all aspects of our operations. We recognize the impact our operations can have on human rights and are committed to respecting the rights of our employees, contractors, suppliers, and the communities in which we operate.*

*Our human rights policy is based on international human rights principles and we strive to create a workplace culture that is free from discrimination and exploitation. We monitor our supply chain for human rights abuses and support human rights initiatives in the communities in which we operate. We believe that every person deserves dignity, equality, and justice and are committed to upholding these principles in all that we do.*



Discover the Harmony  
in the Flow of Life





**POLAT MAKİNA SAN. VE TİC. A.Ş.**

*Head Office / Factory*

Ata Mah. Astim OSB

1.Cadde No: 6 Efeler – AYDIN / TÜRKİYE

**P:** +90 256 231 04 73 (4 Lines) **F:** +90 256 231 04 78

polat@polatas.com.tr – satis@polatas.com.tr

**POLAT MAKİNA SAN. VE TİC. A.Ş.**

*Polat Makina Istanbul Office*

Şerifali Mah. Alptekin Cad.

Söyleşi Sok. No:31 Ümraniye – İstanbul / TÜRKİYE

**P:** +90 216 540 50 25-26 **F:** +90 216 540 50 27

industrial@polatas.com.tr

**POLAT ITALIA GROUP S.R.L.**

*Sales Office.*

C/O Consorzio Zipa, V.le Industria, Jesi Ancona

info@polatitalia.it

**POLAT ITALIA GROUP S.R.L.**

*R&D Center Sales & Service*

Via Rostoncello, 13

Zona Art.le-Ind.le, Val d'Assa 13 – 36015 Carrè

**P:** +39 0445 628967

info@polatitalia.it

[www.polatas.com.tr](http://www.polatas.com.tr) [www.polatitalia.it](http://www.polatitalia.it)

Polat reserves the right to make design and technical changes on machines.

**Polat Makina Customer Service**

For Sale, Service, Maintenance and Complaints requests you can reach Polat Makina customer services at the following number:

**+90850 255 1978**