



CENTRIFUGE TECHNOLOGIES

MILK AND DAIRY



DISCOVER
THE
HARMONY





For the Purest Form of Milk and Dairy

The use of centrifuge technologies in the dairy industry ensures that consumers can enjoy a different range of delicious and nutritious dairy products.

Milk and dairy products are a crucial part of the modern diet, providing essential nutrients like calcium, protein, and vitamins. These products are widely consumed around the world in various forms such as milk, cheese, butter, and yogurt.

Primary usage areas of separator in milk and dairy production industry

- Milk & Whey Cream Skimming*
- Whey & Milk Clarification*
- Bacteria Removal from Milk & Whey*
- Cheese Production*
- Cream Concentration*
- Butter Production*
- * Lactose*
- * Casein*

** For these processes, decanters are used.*

Advantages of Polat Makina

- High product yield with high product quality
- Low utility consumption
- Suitable surface roughness 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
- Self cooling system
- Easy maintenance



*Focus on Performance
with Polat Makina*

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 The Best Separation With Belt Transmission

- High skimming efficiency,
- 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,
- Valvoline system for discharge.
- 100% CIP capable.

CX SERIES

- High speed separation,
- High-performance separation,
- Low energy consumption and carbon footprints,
- Low maintenance costs,
- High skimming efficiency,
- Easy installation thanks to skid design,
- Included pressure water system,
- Hood-cooling system,
- 100% CIP capable.

TX CLARIFIER SERIES

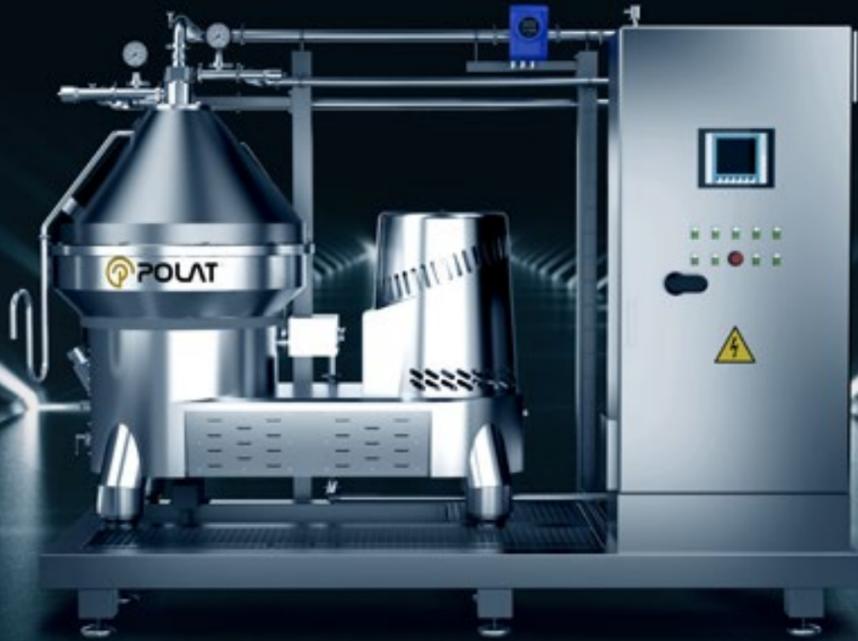
- High speed clarification,
- High-performance clarification,
- Low energy consumption and carbon footprints,
- Low maintenance costs,
- Suitable for hot and cold process,
- Gentle product treatment,
- Easy installation thanks to skid design,
- Included pressure water system,
- Hood-cooling system,
- 100% CIP capable.

BX SERIES

- High-performance bacteria removal,
- Low energy consumption and carbon footprints,
- Low maintenance costs,
- Gentle product treatment,
- Easy installation thanks to skid design,
- Included pressure water system,
- Bowl surface cleaning,
- Hood-cooling system,
- Re-circulation system to prevent milk losses,
- 100% CIP capable.

DECANTER FOR LACTOSE & CASEIN PROCESSES

- Low energy consumption and carbon footprints,
- Low maintenance costs,
- Hygienic components and materials specialized for milk and dairy applications,
- 100% CIP capable,
- Does not leave product residue and chemical residue after CIP application.



Specifications

Materials

Rotating Parts	Bowl bottom	
	Bowl cap	Super martensitic stainless steel
	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
Packing	Bowl, mobile parts	Resistant to high corrosion Chemical compliant
Lubrication		
Automatic lubrication	Oil bath and splash lubrication Auto lubrication system Cooling system	
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

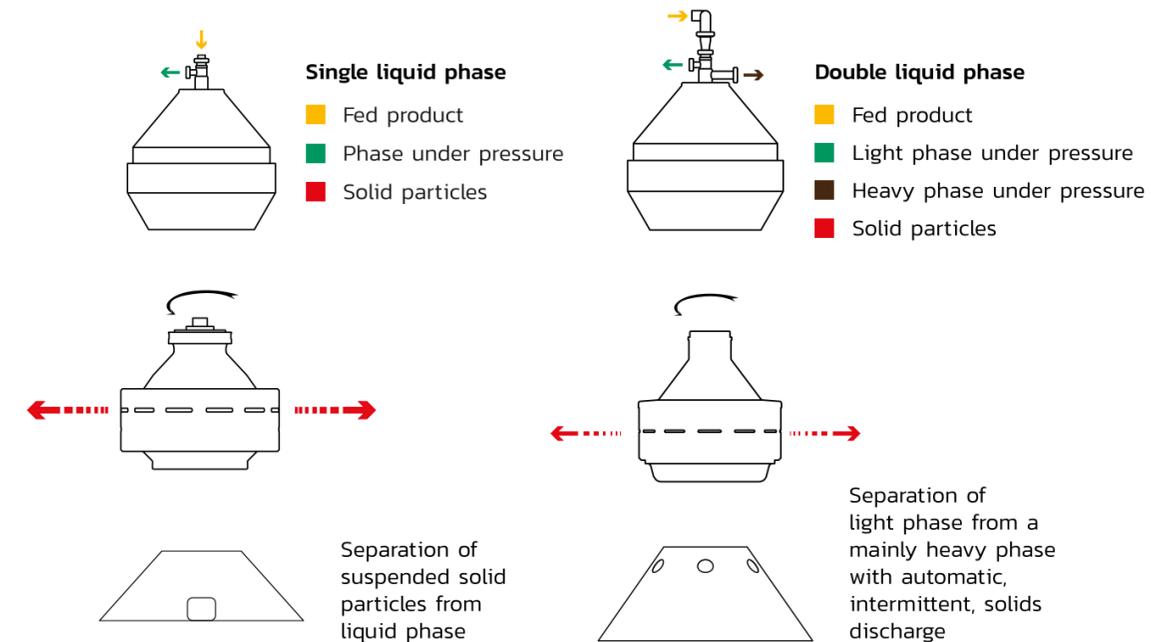
- A- Non skid base version
- B- Stainless or carbon steel skid
- C- Turn-key projects

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 of light liquid from main heavy liquid.



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	5000	3000
TX5	10.000	7000
TX5L	15.000	10.000
TX6	20.000	15.000

Models	Capacity (lt/h)
BX5	10.000
BX6	15.000

*Capacities may vary according to the configuration.

Polat Centrifuge Technologies Support The Following Processes For The Dairy Industry

MILK & WHEY SKIMMING

In the skimmed milk production, the cream in raw milk has to be separated from whole milk that has up to 4% of cream (fat) partial. Efficiency and performance are different, but with our separators, we can achieve the best in both cases.

In the separation process, it is important to handle some parameters such as pressure, back pressure, flow rate, temperature, interval discharging time, and discharging time. This minimizes the shearing forces to maintain the high quality of the milk and cream while optimizing the separation efficiency, resulting in the highest possible yield.

CREAM CONCENTRATION

Cream concentration, a vital step in dairy production, involves removing water from cream to increase its fat content. This process offers multiple benefits. Firstly, it provides cream with the desired fat content for products like butter, ice cream, and whipped cream, ensuring optimal texture and flavor.

Lastly, cream concentration enhances processing efficiency by reducing the volume of product to be handled and transported, resulting in cost savings and improved production. In summary, cream concentration is crucial for enhancing product quality, and optimizing production efficiency in the dairy industry.

BACTERIA REMOVAL

Bacteria removal in milk and whey is important for several reasons. Milk and whey provide an ideal environment for bacterial growth, and contamination can lead to foodborne illnesses and health risks. Bacterial contamination can also reduce product quality and shelf life, resulting in waste and impacting profitability.

To ensure safety and quality, heat treatment, filtration, and centrifugation are commonly used to remove harmful bacteria. These methods eliminate bacteria, remove impurities, and separate components based on density. By preventing contamination and spoilage, Polat dairy equipment warrants high-quality of the final products.

MILK & WHEY CLARIFICATION

Milk and whey clarification is important for several reasons. It removes impurities and undesirable substances from raw milk and whey, resulting in a clearer and visually appealing final product. By eliminating impurities, it also minimizes off-flavours and odours, enhancing the taste and aroma of dairy products. Clarification is the key process for maintaining the stability and consistency of milk and whey, reducing the risk of sedimentation and separation. Moreover, it ensures compliance with regulatory and quality standards, ensuring the safety and purity of dairy products. Additionally, clear milk and whey obtained through clarification serve as better starting materials for the production of other dairy processes, enabling efficient processing and maintaining product quality. Milk and whey clarification processes are crucial to improve product quality, meeting industry standards, and producing high-quality dairy products that meet consumer expectations.

CHEESE PRODUCTION

Separators are the key machines in cheese production as they serve several purposes.

- Milk skimming
- Cream standardisation
- Clarification
- Debacterisation

Their use improves process efficiency, productivity, and consistency in cheese production. Overall, separators are essential for achieving the desired characteristics and maintaining quality standards in cheese production.

CASEIN

Casein is a protein found in milk and dairy products, making up about 80% of the total protein content. It has a unique structure and provides milk with its white colour and opacity. Casein is a complete protein containing all essential amino acids. It is used in cheese making, contributes to the texture and stability of dairy products like yogurt and ice cream, and has industrial applications in adhesives and coatings.

Decanters are essential in casein production as they separate curds from the whey, remove excess moisture, and improve process efficiency. They facilitate the separation of solids (casein) from the liquid phase (whey) using centrifugal force. Decanters play a crucial role in obtaining pure casein with the desired texture and consistency while ensuring the quality and purity of the final product.

BUTTER PRODUCTION

Separators play a key role in butter production. They skim the milk and standardize the cream at the concentration requested to facilitate the final butter production. Separators also help to concentrate the cream, resulting in a higher-quality product.

Separators improve efficiency and productivity in the production process. Overall, separators play a crucial role in achieving consistent quality and desired characteristics in butter production.

LACTOSE

Lactose is a type of sugar found in milk and dairy products. It is a disaccharide composed of two sugar molecules: glucose and galactose. Lactose is the primary carbohydrate in milk and provides a source of energy for infants and young animals. In order to digest lactose, the enzyme lactase is required, which breaks down lactose into its component sugars for absorption in the body. Some individuals may have lactose intolerance, a condition where their bodies lack sufficient lactase enzymes to fully digest lactose, resulting in digestive discomfort after consuming lactose-containing foods. Decanters are necessary in lactose production as they separate lactose crystals from the liquid solution, remove excess moisture, and improve process efficiency. They play a crucial role in the separation of solids (lactose crystals) from the liquid phase, ensuring a concentrated and pure lactose product. Decanters contribute to the quality and purity of lactose by eliminating impurities and unwanted components.



Material Options:

-AISI 316

Material Options:

-AISI 304

Material Options:

-Super Martensitic / Duplex

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

<p>Back Pressure Valve It helps to regulate back pressure on outlet lines</p>	<p>Automatic Solid Discharge It helps to automatically conduct separator explosion process</p>	<p>Manual Solid Discharge It helps to manually conduct separator explosion process</p>
<p>Manual Standardization Kit It helps to regulate the fat ratio in the product coming out of the separator</p>	<p>Control Panel Optimum monitoring and operation with machine, safety equipment and other auxiliary equipment</p>	<p>Heating System It helps to regulate the temperature of the fed product</p>
<p>CIP Cleaning Compliance with CIP cleaning system</p>	<p>Separator Feed It helps to operate at low feeding pressure</p>	<p>Filtering Unit It prevents feeding large solid materials in the supplied product into the separator</p>

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 Indústira, 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 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