ANDRITZ Separation

The right ingredients
for your success
in the dairy industry

www.andritz.com

How can we help improve
your dairy production?

How would you like your dairy business to develop over the next coming years? What consumer trends and regulatory challenges will affect your product mix? What tactics will fend off your competitors? Where are the bottlenecks – and where are the opportunities?

Your goals come first

In our work with big companies like Cadbury, Hochdorf, Hofmeister, and Nestlé as well as many smaller family dairies, we've come to the realization that no two processing plants are exactly alike. Yes, there are some technical similarities in the process and equipment, but that's where the similarities stop.

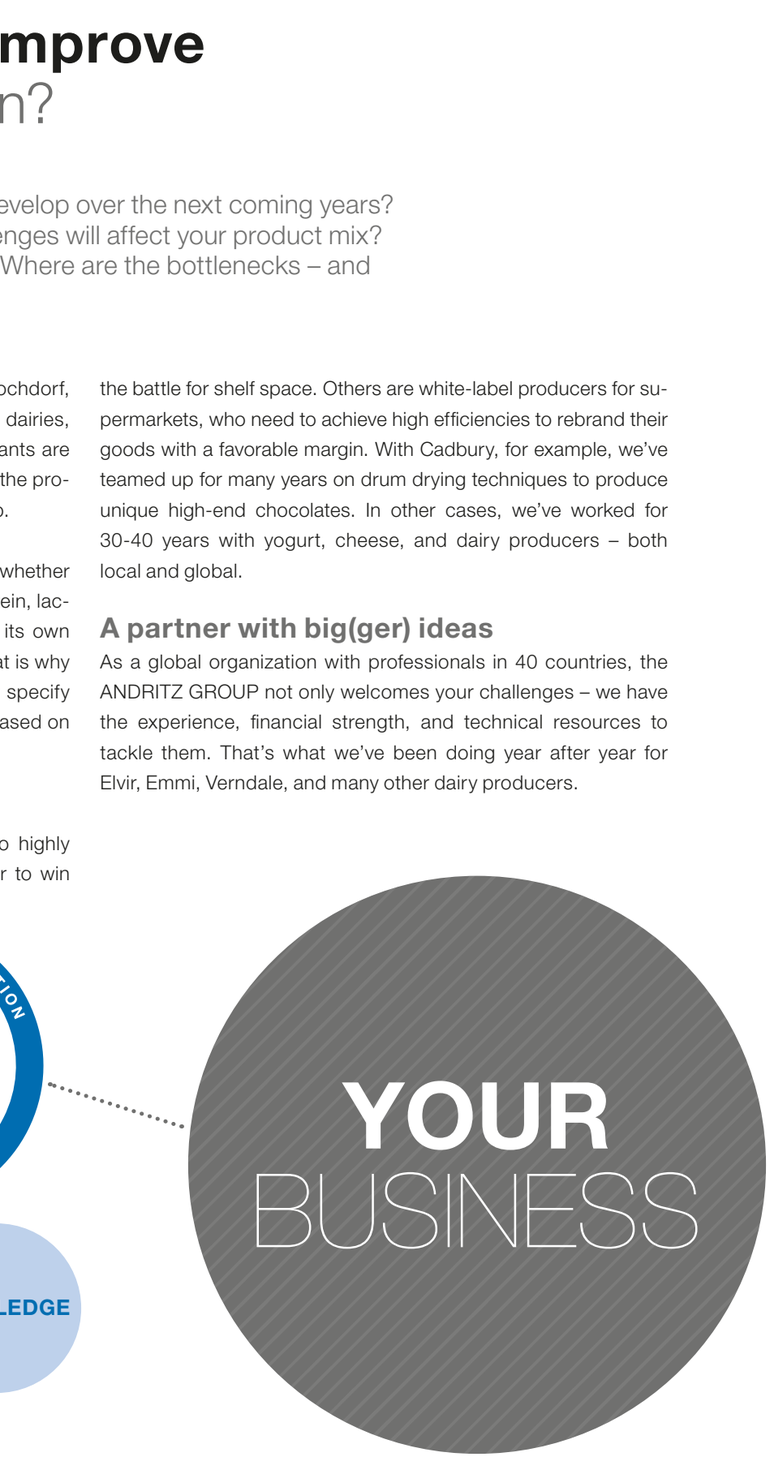
Each of our customers has its own specific challenges, whether producing milk, cream, butter, cheese, casein, whey protein, lactose or powdered milk. Each is under pressure to find its own path toward more efficient and profitable production. That is why we make it a point to first understand these needs, then specify the exact machine to fit into your production process – based on our 100+ years of experience in dairy.

Optimizing your processes

Many of our customers are selling branded goods into highly competitive supermarkets, constantly innovating in order to win the battle for shelf space. Others are white-label producers for supermarkets, who need to achieve high efficiencies to rebrand their goods with a favorable margin. With Cadbury, for example, we've teamed up for many years on drum drying techniques to produce unique high-end chocolates. In other cases, we've worked for 30-40 years with yogurt, cheese, and dairy producers – both local and global.

A partner with big(ger) ideas

As a global organization with professionals in 40 countries, the ANDRITZ GROUP not only welcomes your challenges – we have the experience, financial strength, and technical resources to tackle them. That's what we've been doing year after year for Elvir, Emmi, Verndale, and many other dairy producers.



Meeting tomorrow's dairy needs requires a bigger perspective

Changes in raw materials. Varying consumer tastes. New regulations. Our response to rising complexity in the dairy industry is a simpler, more reliable, and complete approach. One that surrounds you with the right solutions and services.

Our solutions don't start or end with a decanter, separator, filter, or dryer. They start with your productivity and quality requirements, and continue with the service and support you need.

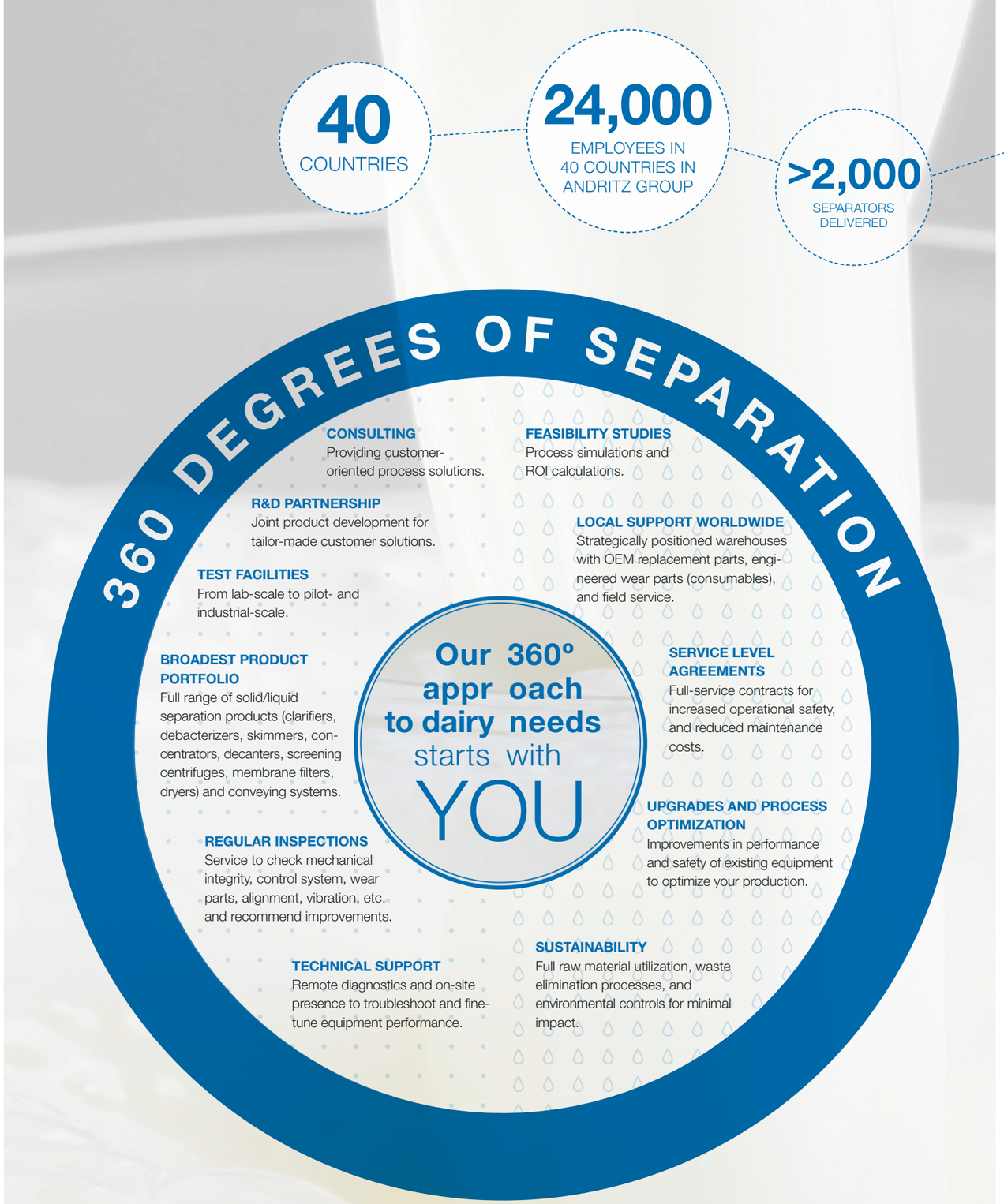
We've got you covered

Our ambition is to surround you with a choice of technical solutions and superior services. Once you have access to this full range of capabilities, we believe we will be partners for life. Your job becomes easier and our ability to address requirements grows. It is this kind of bigger perspective that has enabled us to remain a strong partner to companies like Nestlé and Hochdorf, as well as many smaller, local companies.

With the ANDRITZ GROUP you gain access to the full resources of an experienced global partner operating 250 production sites, service and sales companies worldwide. Ours is an approach that's not pushing a particular technology for selfish reasons, but for the right reasons. With our wide portfolio, we can serve as a neutral advisor in selecting the technology best suited to your process.

100 years in solid/liquid separation

With more than 100 years' experience working with the dairy industry, ANDRITZ SEPARATION is one of the world's largest suppliers of mechanical and thermal solid/liquid separation systems. Whether your dairy is part of a global group or a family company, our mission is the same: to provide safe, reliable, efficient, and sustainable solutions that boost your productivity. Now and in the future.



ANDRITZ Separation

2,000 separators delivered

New dairy customers are often surprised by our depth of experience gained in 100+ years dairy industry and separator business. Or that we have delivered more than 2,000 separators worldwide and are adding about 150 new installations a year for dairies alone.

Well-respected, quality names

This is to be expected for a group that has rapidly grown through acquisitions and now has about 24,000 employees around the world. Through our expertise in research and development, we strive to generate sustainable and highly efficient process-oriented separation solutions on a daily basis.

As part of this growth, we've integrated the capabilities of a diverse group of well-known suppliers in the separation business. These include: **Frautech, Royal GMF Gouda, KMPT, Guinard, Ritterhaus & Blecher, Escher Wyss, Sprout Bauer, Netzsch Filtration, 3Sys Technologies, Bird, KHD Humboldt Wedag, Lenser, and Vandenbroek.**

Investing in research and development

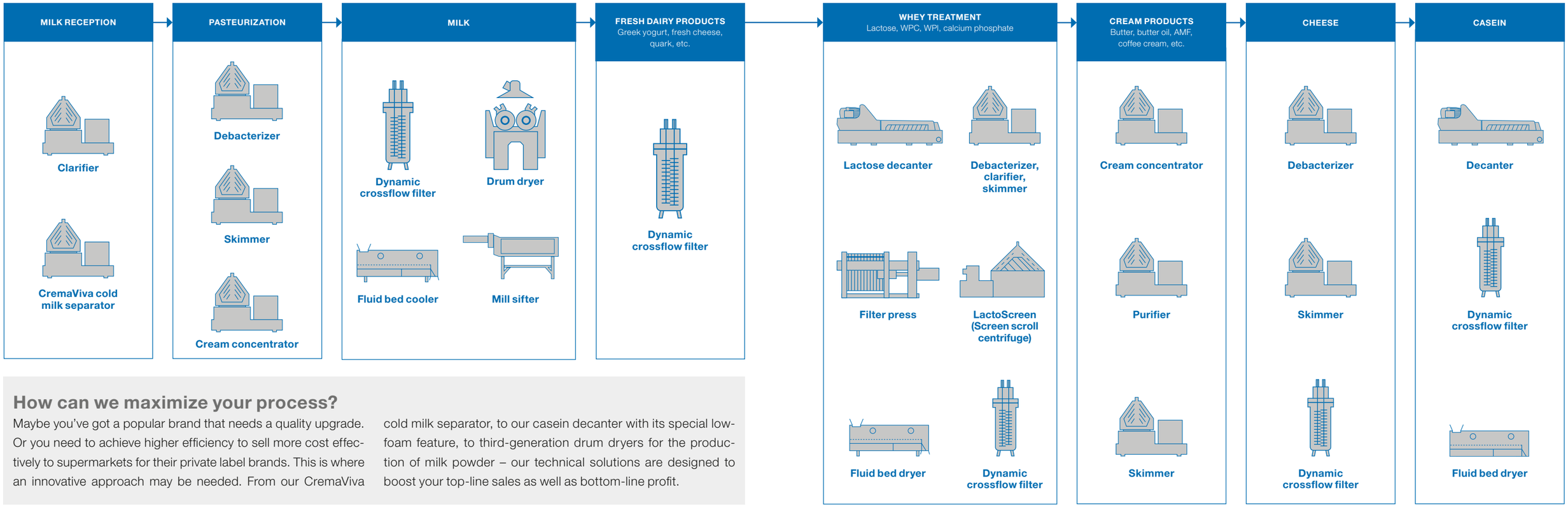
We are constantly investing in R&D to improve our broad range of separators, decanters, clarifiers, membrane filters, drying, and wastewater treatment solutions. Our R&D labs around the globe are at your disposal to investigate new types of product development. It's something we've been doing for more than 100 years.

Where we fit into
your production line

One of our most successful dairy customers recently told us: “We see you guys as separation experts with a good overview of the process.” We couldn’t have summarized our focus better. Whether you are producing liquid milk, powdered milk, butter, yogurt, quark, or cheese, we concentrate on improving your productivity – in all types of separation.

At the same time, not all of our customers are aware of our main areas of expertise. Nor do they understand that we can provide multiple technologies within a particular process phase, meaning that we can always get the right solution – whether for dairy, cream and cheese production, casein, whey treatment, or even powdered milk. With these broad capabilities, we can focus on improving your processes and plants, giving you a smooth interface between mechanical design, process development, and automation. And when it comes to wastewater handling, we also have a wealth of references and a wide array of well-proven, innovative solutions.

▲ ANDRITZ separator



How can we maximize your process?

Maybe you’ve got a popular brand that needs a quality upgrade. Or you need to achieve higher efficiency to sell more cost effectively to supermarkets for their private label brands. This is where an innovative approach may be needed. From our CremaViva cold milk separator, to our casein decanter with its special low-foam feature, to third-generation drum dryers for the production of milk powder – our technical solutions are designed to boost your top-line sales as well as bottom-line profit.

Milk reception and pasteurization
A more profitable approach

Whether you're producing packaged milk, whipped cream, or fresh cheese, it all comes down to removing as many impurities as possible while retaining the superior qualities of the raw ingredients. To ensure the very best results, we offer a range of highly efficient solutions for dairies of all sizes – from impurity removal, debacterization, and purification to drying and milling of powder.

Our separation solutions link the various process steps such as pasteurization, standardization, and homogenization. It's a uniquely gentle process that produces dairy products of the highest quality, with minimal somatic cells, bacteria, spores and maximum retention of undamaged native fat globules and milk proteins. All so you can concentrate on further process streams and value-added products. For example, we can help you to minimize the bacteria content in the milk prior to pasteurization and evaporation by using our debacterizer. Or offer special know-how for powdered milk used in exclusive chocolates.

The speed and efficiency with which our machines separate, clarify, concentrate, purify, and dry adds to your productivity, ensuring reliable performance and lower total operating costs – year after year.

2,000
SEPARATORS SOLD

500–70,000 l/h
CAPACITY RANGE OF OUR SEPARATORS

500
MILK DRYERS SOLD

100%
ULTRA-PURE CLOSED DRYING SYSTEM

Skimmer
- Easy-to-maintain flat belt drive
- 0.05% residual fat
- 8,000 h maintenance intervals
- Wide range of capacities
- 30 min pitstops for belt changes
- Energy-efficient drive system

Skimmer
- Easy-to-maintain flat belt drive
- 0.3% residual fat
- 8,000 h maintenance intervals
- Wide range of capacities
- 30 min pitstops for belt changes

Drum dryer
- Higher thermal efficiency
- Reliable for long, continuous lifecycle
- Hygienic (100% closed) in accordance with HACCP and EHEDG standards

Dynamic crossflow filter
- Less energy consumption
- Excellent concentrations possible
- 100% whey protein recovery

MILK RECEPTION

IMPURITY REMOVAL
Clarifier
- Energy-efficient and maintenance-friendly
- Extremely reliable
- Efficient impurity removal
- 50% bacteria removal

STORAGE

DEBACTERIZING
Debacterizer
- Extremely reliable and easy to maintain
- Up to 99% bacteria removal
- High throughput up to 40 m^3/h

UP TO **99%** REMOVAL OF BACTERIA

SKIMMING

STANDARDIZATION

EXCESS CREAM

EXCESS CREAM

BUTTERMILK

BUTTER

MACHINING

POLISHING

DEAERATION

HOMOGENIZATION

PASTEURIZATION

CONCENTRATION EVAPORATION

FERMENTATION

MEMBRANE FILTRATION

DRYING

MILK POWDER

FRESH DAIRY PRODUCTS

PASTEURIZATION

CONCENTRATION
Cream concentrator
- Very high separation efficiency
- Ease of maintenance
- Minimized damage to fat globules

HOMOGENIZATION

PURIFICATION
Concentrator
- Very high separation efficiency
- Reliable design
- Ease of maintenance

EVAPORATION

BUTTER OIL AND AMF

>80% CREAM CONCENTRATION

CremaViva cold milk separator

Ensures gentle treatment of milk fat globules to produce higher quality cream at low temperatures with significantly lower energy consumption. By increasing the cream's temperature by just 1 ° C, the end product remains alive with flavor. Hence the name: CremaViva.

Key benefits
- Minimal damage to fat globules
- Special sealings
- Minimal downtime
- Higher product quality

ANDRITZ Separation

EXPERIENCE SINCE
1916

Drum dried milk powder
More chocolate, lower cost

It's really very simple. You want to continue to produce high-quality chocolate but not at any cost. The addition of drum dried milk powder can offset the need for expensive cacao butter, while adding superior taste. This is precisely why our turnkey solutions for drum dried milk powder have become so popular among leading chocolate makers.

Your reliable turnkey partner

Ever since developing the world's first drum dryer in 1916 and our first mill sifter a year later, we've built a global reputation in the food industry for providing robust, high-quality drum drying processing lines. With more than 500 dryers installed for milk drying alone, we've proven ourselves to be a capable partner for handling everything from the engineering and design to installation and start-up.

Your standard is our standard

But we go a step further. Instead of simply adjusting our machines to meet the industry standard, we are very keen in adapting our process to meet your specific needs. We can even test your materials in our pilot plants to help achieve your goals in terms of taste, purity, and product characteristics. In addition to its high concentrations of free fat, which enables you to reduce the amount of cacao butter, drum dried milk powder also maintains excellent fluidity in the chocolate mass while giving the milk powder a distinctive caramel taste.

MULTI-STAGE EVAPORATION → **HOLDING TANK** → **DRUM DRYING** → **FLUID BED COOLING** → **MILL SIFTER** → **PACKAGING**

Evaporator
Extremely energy-efficient, our evaporation solutions remove more than 50% of water, resulting in 40-45% solids content

>50%
REMOVAL OF WATER

Contact drum dryer
- Excellent "scraping properties"
- Higher even pressure and heating
- No contaminants (100% closed system)
- Unique caramel taste
- Gentle, consistent level of drying

Fluid bed cooler
- Energy-efficient cooling
- Gentle treatment of dried film
- No rotating parts

Mill sifter
- Uniform flakes
- Constant bulk density
- Removal of impurities
- Easily interchangable sieves in different types and perforations

100%
CLOSED SYTEM

Packaging
As a turnkey provider, we offer a range of packaging machines, depending on your specific product and shipping requirements

Drum dryer ▶

100%
UNIQUE CARAMEL TASTE

500
MICRONS FINENESS IN POWDER

CUSTOMERS
CADBURY, ELVIR, EMMI MILC, HOCHDORF, AND HUNDREDS OF SMALLER COMPANIES

Our pilot plant, your secret weapon

At our pilot plants around the world, you can test your ideas on using milk powder in a simulated process that allows you to see the results before implementing them in full-scale production. This includes many cost-saving advantages in terms of integrating various steps of the production process.

Casein production

The smarter way to a better product

When our customers approached us with a common challenge, we were determined to find an answer. Rather than using chemical defoaming agents, we asked, what if there was a different way to decant? One that removed the need for bigger tanks and costly chemical additives altogether? As it turned out, there was. And it not only produced a purer product – it was also more cost-efficient.

Low foam and chemical-free

Decanter centrifuges have been used in the dairy industry for over 100 years, and the development continues. Since our first casein installation in 1970, we have continued to refine our solutions, developing low-foam features that reduce the need for chemical defoaming agents. With this innovative approach to casein decanting, the end product is not only free of chemicals – a key potential allergen – but is also less costly to produce, with some customers saving up to 25,000 euros a year in defoaming agents alone.

Making the most of your resources

This work has led to a generation of decanters for the production of casein that perform continuously, are easy to maintain and clean, and produce a dry cake that preserves the valuable casein product. Our decanter's performance is measured not just by its separation capabilities, but also by its "simply clever" design – delivering high availability and efficient cleaning-in-place (CIP).

It's all part of our ongoing effort to develop smarter, more efficient solutions for casein producers everywhere. Whether it's a clarifier, skimmer, debacterizer or decanter, the result is a complete processing solution that creates the most value for your facility, your end product, and your production staff – for years to come.

UP TO
25,000
EURO SAVING P.A.
WITH DECANTER LOW
FOAM FEATURE

1970
FIRST CASEIN
INSTALLATION

UP TO
40%
REDUCTION
IN MAINTENANCE
TIME

Dynamic crossflow filter
- Hygienic design and excellence in CIP
- Ceramic membranes for long service life
- Very compact and easy to install
- Up to 30% savings in operation costs

MICROFILTRATION

Dynamic crossflow filter
- Up to 30% savings in operation costs
- Very compact and easy to install
- Hygienic design and excellent cleaning in place
- Longer service life by ceramic membranes

DIAFILTRATION

PASTEURIZED SKIM MILK

PRECIPITATION

SEPARATION

Decanter
- Gentle treatment for preserved casein quality
- Long service life due to robust design and materials

WASHING 1

Decanter
- Maximum availability as a result of fully automated CIP
- Excellent clarification properties
- Reduction of allergic potential

WHEY CLARIFICATION

Clarifier
- Energy-efficient and maintenance-friendly
- Extremely reliable
- Efficient impurity removal

WHEY

WASHING 2

Decanter
- Ease of maintenance: screw removal without dismantling drum
- Reduction of chemical defoaming agents
- Time savings of up to 40%

DRYING

Drum dryer
- Higher thermal efficiency
- Reliable for long, continuous life cycle
- 100% hygienic in accordance with HACCP and EHEDG standards

Fluid bed dryer
- Drying in one stage
- Gentle drying with minimum heat impact
- ATEX-compliant design
- Perfect line compatibility with decanter

CASEIN CASEINATE

Low foam – low cost

As you know, when precipitated casein is separated in a conventional decanter, it foams easily. Consequently larger tanks are required and the addition of expensive defoaming agents to knock the foam down.

A special innovation in our casein decanters is our low-foam feature. By using a special pressure discharge system, foam is avoided. This results in less installed tank volume, minimized defoamer costs, and improved casein quality.

Whey treatment
Redefining operational efficiency

60
YEARS OF DECANTER TECHNOLOGY

150
NEW INSTALLATIONS A YEAR

1951
FIRST LACTOSCREEN INSTALLATION

For whey processors, it's critical that not a drop goes to waste. This means constantly finding innovative new ways to separate, wash, filter, and extract whey concentrate and protein crystals – all while minimizing operating costs. As one of the leading suppliers of lactose decanters, screen scroll centrifuges, filters, and dryers – we're dedicated to helping you increase efficiency nearly every step of the way.

Few global suppliers can match the range of expertise and innovation we bring to customers in whey treatment. For decades, we've developed not only high-yield lactose decanters, but also the cost-efficient LactoScreen, with its low residual moisture content and excellent wear protection. More recently, our dynamic crossflow filter marks a true step forward in efficient whey concentration. Especially suited for thermal sensitive products, it provides savings in time and energy of up to 30%.

WHEY

CLARIFICATION
SURPLUS PROTEIN

Clarifier
- Energy-efficient and maintenance-friendly
- Extremely reliable
- Efficient impurity removal

DEBACTERIZING

Debacterizer
- Extremely reliable and easy to maintain
- Up to 99% bacteria removal
- High throughput up to 40 m^3/h

SKIMMING
SURPLUS CREAM

Skimmer
- Easy-to-maintain flat belt drive
- 0.05% residual fat
- 8,000 h maintenance intervals
- Wide range of capacities
- 30 min pitstops for belt changes

PASTEURIZATION

ULTRAFILTRATION DIAFILTRATION
WPC/WPI

Dynamic crossflow filter
- Hygienic design and excellent CIP
- Ceramic membranes for long service life
- Very compact and easy to install
- Up to 30% savings in operation costs

NANOFILTRATION

REVERSE OSMOSIS

PROCESS WATER

DECALCIFICATION

EVAPORATION CRYSTALLIZATION

SEPARATION

Lactose decanter
- Efficient water usage
- High yield due to special scroll design
- Integrated washing of lactose
- Maximum availability
- Time savings of up to 40% in maintenance

WASHING, SCREENING DEWATERING

LactoScreen
- Lower drying costs due to low residual moisture content
- Exeptional yield due to gentle crystal handling
- High capacity
- Excellent wear protection against abrasive crystals
- Shorter CIP cycles

DRYING

Fluid bed dryer
- Drying in one stage
- Gentle drying with low crystal breakage
- ATEX-compliant design
- Perfect compatibility with decanter

FOOD LACTOSE

DISSOLVING DECOLORING

EVAPORATION CRYSTALLIZATION

SEPARATION

Lactose decanter
- High yield due to special scroll design
- Integrated washing of lactose
- Time savings of up to 40% in maintenance

WASHING, SCREENING DEWATERING

LactoScreen
- Lower drying costs due to low residual moisture content
- Exeptional yield due to gentle crystal handling
- High capacity
- Excellent wear protection against abrasive crystals
- Shorter CIP cycles

DRYING

Drum dryer
- Higher thermal efficiency
- Reliable for long, continous lifecycle
- Hygienic in accordance with HACCP and EHEDG standards

PHARMA LACTOSE

Put 150 years of OEM experience to work

Need to optimize your process? Boost availability? Ensure non-stop productivity? When you work with ANDRITZ SEPARATION, you gain access to one of the world's largest OEM manufacturers for solid/liquid separation. Put our in-depth knowledge of separation equipment and processing to work for you.

Vast experience through large installed base

With an installed global base of more than 55,000 solid/liquid separation solutions and systems, you can imagine that we take service seriously. Wherever these customers are located, we work very closely with them to maximize uptime and boost efficiency.

Well-known OEM brands

Some customers know us as the people with ANDRITZ SEPARATION on our overalls. Others have come to understand that we are the OEM behind former brand names like Netzsch Filtration, 3Sys Technologies, Bird, KHD Humboldt Wedag, Rittershaus & Blecher, Guinard, Lenser, KMPT, Escher Wyss, Royal GMF Gouda, Frautech, Vandenbroek and Sprout Bauer, companies who all have been acquired by ANDRITZ. But frankly, we are capable of servicing and supplying spare parts for nearly all brands of solid/liquid separation equipment on the market.

Local support backed by global expertise

Our service philosophy is simple: One phone call, one contact person, one dedicated team that speaks your language and knows your equipment and process. This is not an empty promise. It is backed by a network of 550 service specialists for solid/liquid separation equipment and systems as well as service centers all around the world.

A true full-service provider

Whether you need spare parts, rentals, local service, repairs, upgrades, or modernization of your equipment, ANDRITZ SEPARATION is a 360-degree service partner. From initial consulting through to service agreements, plant optimization, automation, and training programs, we are always looking for ways to minimize downtime and increase predictability in operations while raising your overall production efficiency. In short, we've got you covered.

Local support
Responsive local service centers and field service technicians

OEM spare parts
Wear and spare parts from OEMs or in OEM quality in local inventories

Repairs & upgrades
Optimization of machine and process performance, repair work, retrofitting, and modernization

Service agreements
Preventive maintenance, from contracts for spare parts, maintenance, inspections, and repairs to upgrades and operation

Second-hand & rentals
Certified second-hand and rental machines

Automation
Automation tools to improve processes and plants, both technically and economically

Training
Operator training and tailored seminars for operating and maintenance personnel

Image: Skånemejerier

Where do you want to go TOMORROW?

Now you've seen how ANDRITZ SEPARATION is striving to bring you the right ingredients for success: Strong local service; R&D close to you; reliable and efficient solutions; all backed by a 150-year track record.

Let's sit down and see how we could take your operations to the next level. Contact us today.
www.andritz.com/separation-food

FOOD

ANDRITZ Separation

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