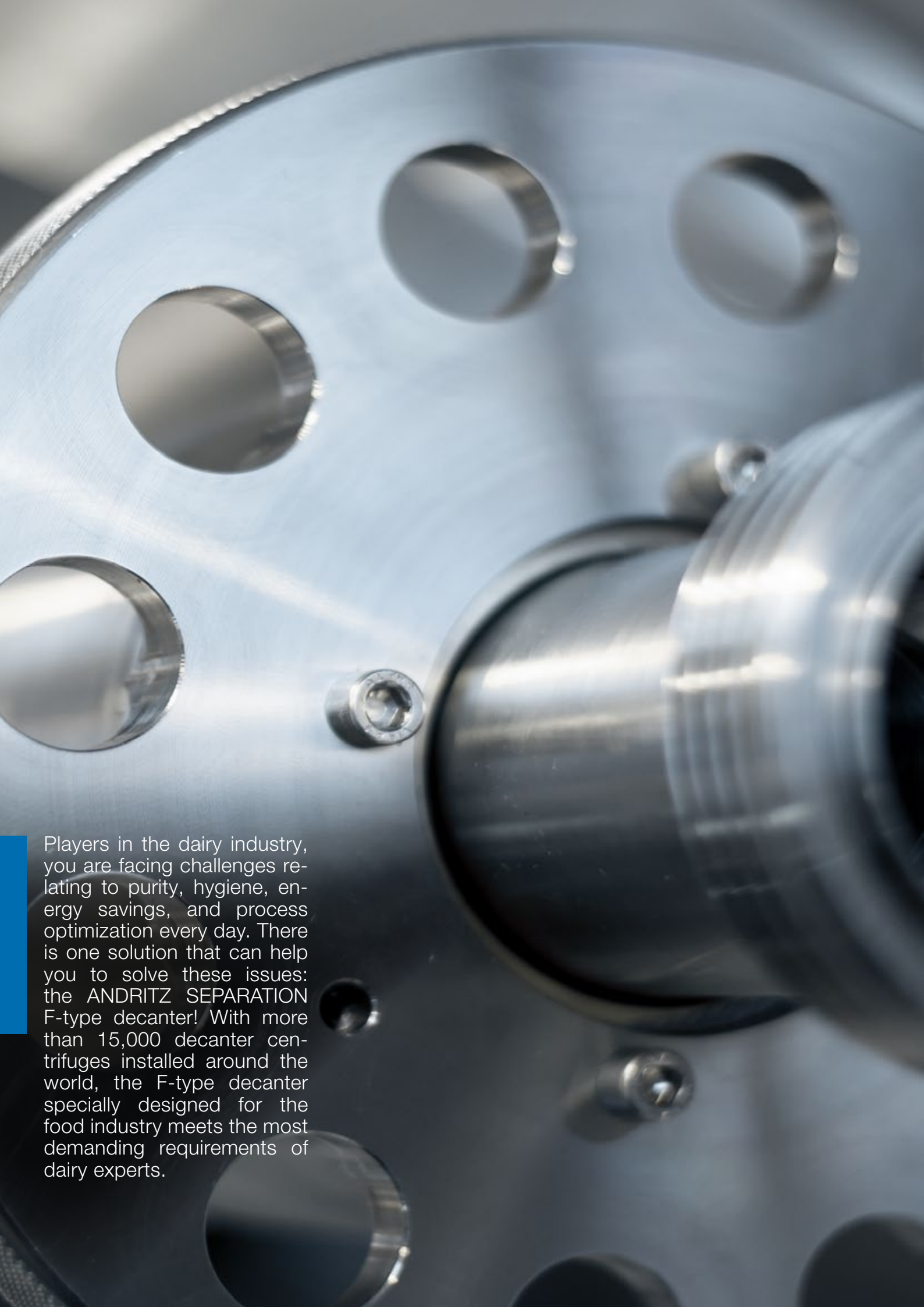


F-type decanter centrifuge

For efficient separation and hygienic processing in the dairy industry





Players in the dairy industry, you are facing challenges relating to purity, hygiene, energy savings, and process optimization every day. There is one solution that can help you to solve these issues: the ANDRITZ SEPARATION F-type decanter! With more than 15,000 decanter centrifuges installed around the world, the F-type decanter specially designed for the food industry meets the most demanding requirements of dairy experts.

Reliable technology based on detailed knowledge of the process

At ANDRITZ SEPARATION, we know every process in the dairy industry, and we pay attention to your every need: each dairy application has its own specially designed decanter with specific features to achieve the best performance and meet all of your requirements.

Hygienic processing

The general machine design has been modified to fulfill the stringent demands of the dairy industry in terms of hygienic design and concept. Surfaces, seals, and angles are designed in accordance with the latest food guidelines, such as 3A or EHEDG. Depending on the specific application, the F-decanter series comes

equipped with various cleaning phases in the cleaning-in-place (CIP) system.

By using our CentriTune control system, up to ten CIP phases can be planned. The integrated CIP nozzles ensure optimum cleaning efficiency for all related parts, such as solids and liquid casing, feed pipe, or outer bowl parts, thus preventing any impurities or contamination in the next production run. The machine is manufactured in SANITARY design as standard (fully stainless steel frame and final polishing of <math><0.8\text{ RA}</math> in all areas in contact with the product), but can also be quoted with the PERFORMANCE finish (plain steel frame with stainless steel parts integrated or with a separate housing made entirely of stainless steel).

Your benefits

- Excellent performance and clarification due to optimized scroll design
- Maximum availability as a result of excellent cleaning properties and fully automated CIP
- Optimum product quality thanks to integrated washing device and special feed chamber, ensuring gentle treatment
- No need for defoamer as a result of a special pressure discharge system at the liquid end
- Able to accommodate customer needs and provide best performance thanks to modular design
- Robust design and high-grade materials for long service life
- Low maintenance cost and easy dismantling with unique inline design



▲ Application-driven scroll design

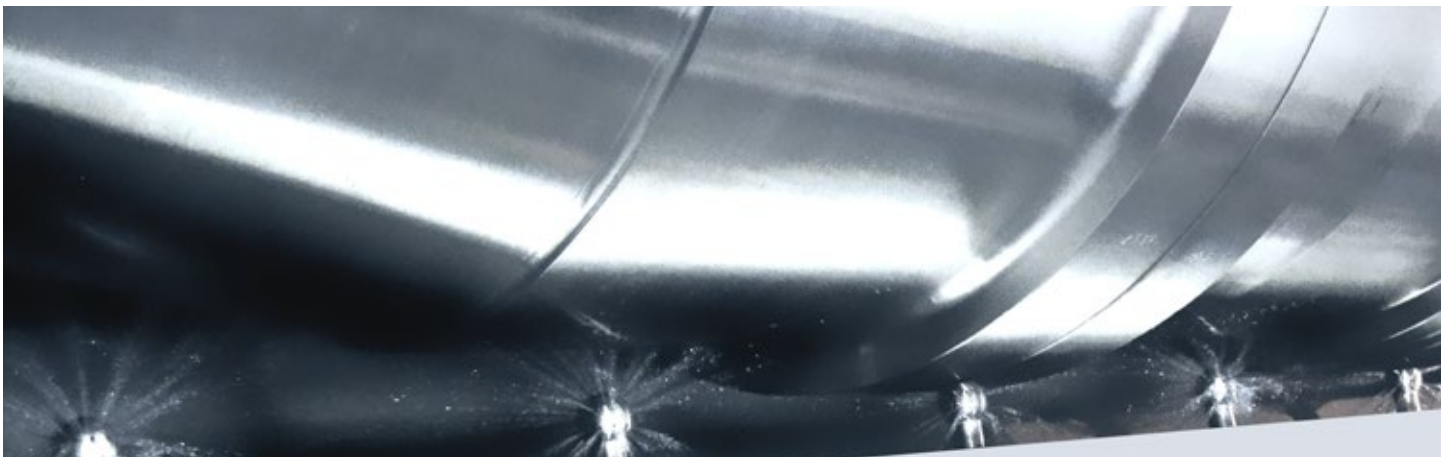
Application-driven design to offer you specific benefits

Coming in sanitary design and with fully integrated CIP for all dairy applications, our F-series also satisfies the specific product-related demands with other particular features:

- **Casein and milk protein:** low-foam centripetal pump design so that there are no limitations at the whey end, and best whey clarification due to our open flight concept.
- **Lactose:** Short bowl combined with the gentle feed device for lowest possible crystal shearing effects, internal washing for higher lactose purity, and duplex MOC for abrasion resistance. This decanter has been designed to handle high solids loads.
- **Cheese fines:** Pipette device to adjust the pond level during operation in order to optimize clarification and obtain a higher yield. Variable differential speed ensures a constant solids concentration, even under variable feed conditions.
- **Milk minerals – calcium phosphate:** Handling of thixotropic calcium phosphate slurry and high capture rates due to special scroll design and pipette device (designed to enable precise adjustments).



▲ Centripetal pump



▲ Washing ramp of CIP system

Our range for your efficient separation and hygienic process

Our large range of decanters helps us to provide you with a solution to meet your specific demands in the dairy industry. The application-driven design, combined with the features in our full range of machines, can handle the capacities you need. From low end flows with low solids contents up to high flow rates with high solid contents, we can assist you in all your separation challenges.

Two levels of finish

Depending on your requirements and the final use of the product, ANDRITZ SEPARATION experts can recommend different levels of finish:

- **Performance**, plain carbon steel frame with separate housing and cover made of stainless steel and bowl parts polished to the needs of the application
- **Sanitary**, our standard for dairy applications, fully stainless steel frame and polishing of areas in contact with the product to <0.8 RA

Whatever the level of finish, you can benefit from the following standard scope of supply:

- G-force up to 4,000 g
- Three types of drive, depending on your application (single motor, back drive, and regenerative drive)
- Low energy consumption features
 - High resistance to abrasion (special material on scroll flight) with all wetted parts in stainless steel or duplex

- Washing points (bowl, solid and liquid casing, feed tube double skin)
- CentriTune control (ANDRITZ centrifuge control system) linked to your SCADA system – decades of experience in automation for ease of operation and production optimization



Model*	F2000	F3000	F4000	F5000	F6000	F7300
G-force (g)*	Up to 4,000	Up to 4,000	Up to 4,000	Up to 4,000	Up to 4,000	Up to 4,000
Main motor (kW)*	7.5-15	11-37	22-45	37-55	75-132	90-200
Secondary motor (kW)*	5.5-7.5	5.5-11	5.5-15	11-22	15-37	37-90

* Depending on your specific application

CentriTune centrifuge control system

Decades of experience in one box

The basic module, which is the CentriTune Core, can interact in different operating modes, bringing undeniable advantages to your process:

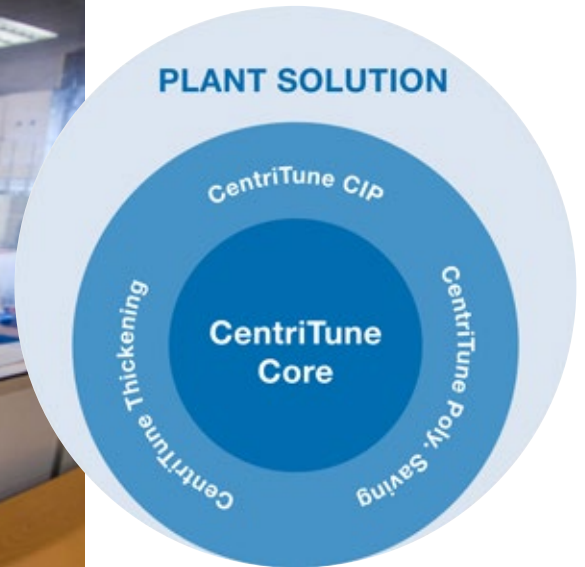
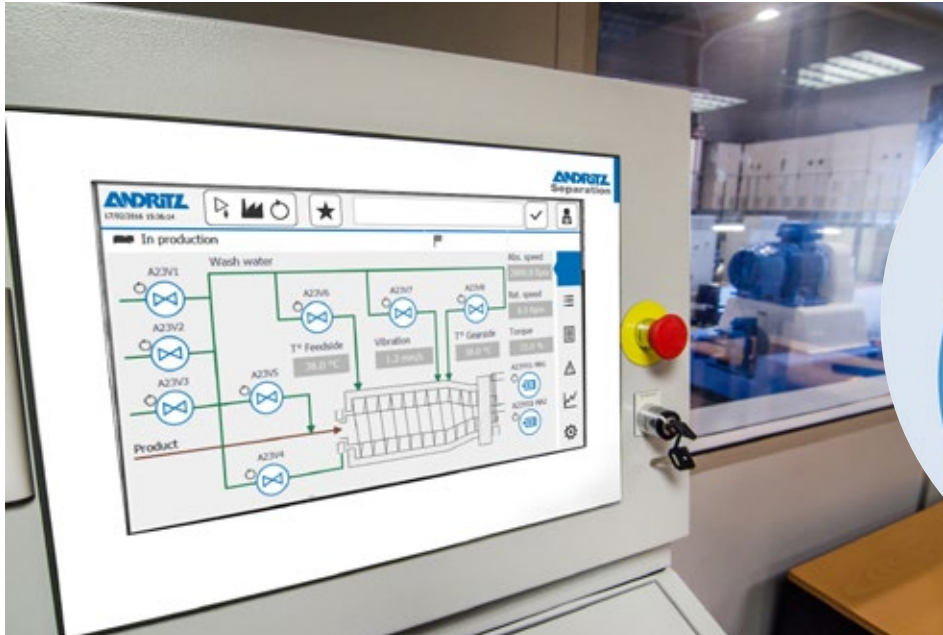
- Relative speed control allowing the operator to enter the speed set points directly. If the feed product concentration is stable, this is the preferred and most efficient control mode.
- Torque control mode for constant dryness at cake discharge. The speed set point for the drives is calculated accordingly via a sophisticated control algorithm. In this mode, the machine reacts automatically to any change in the feed concentration and ensures constant product quality on the output side, thus stabilizing operation throughout a vast operating window.

- Cleaning sequences preconfigured for best use and flexible to adapt to your plant and your product
- Maintenance and manual operation mode
- Alarms and support in troubleshooting

CentriTune CIP add-on

CIP is, by definition, a method of cleaning equipment without disassembling it. The CentriTune CIP add-on is a hardware and software extension based on the well proven CentriTune Core functions, recognized as a solution for any application where higher cleaning efficiency is required and where standard machine flushing is not sufficient. The CIP add-on system includes digital outputs to control up to eight automatic valves, which can be configured

from the HMI. The operator can then define which valves are to be opened, the absolute speed, relative speed, and time. This provides a configuration exactly meeting the process needs and considering the biggest advantages of the ANDRITZ decanter centrifuge with all its outstanding features, without extra programming effort.



A world of service

Put our 150 years of OEM experience to work for you

With ANDRITZ SEPARATION, you gain access to one of the world's largest OEM manufacturers for solid/liquid separation systems, including such well-known names as Bird, KHD, Guinard and more. 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. Wherever you operate, our network of 550 service specialists and global service centers ensures that we are always there to support you for many life cycles to come. Let's sit down and see how we could take your operations to the next level.



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 and rentals

Certified second-hand and rental machines



Process optimization

Automation tools and process expertise to boost your profit



Training

Operator training and tailored seminars for operating and maintenance personnel

What's your biggest separation challenge?



ANDRITZ SEPARATION is the world's leading separation specialist with the broadest technology portfolio and more than 2,000 specialists in 40 countries. For more than 150 years, we have been a driving force in the evolution of separation solutions and services for industries ranging from environment to food, chemicals, and mining & minerals.

As the OEM for many of the world's leading brands, we have the solutions and services to transform your business to meet tomorrow's changing demands – wherever you are and whatever your separation challenge.

Ask your separation specialist

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