



The New Generation of GEA Westfalia Separator **eco** Separators

Flexibility and performance for throughput
capacities of 3000 to 15,000 l/h

GEA Westfalia Separator eco – More Efficiency and Economy from Scratch

Safe, reliable and more flexible than ever: the GEA Westfalia Separator **eco** family opens up the full potential of profitable process management.

GEA Westfalia Separator Group is known in dairies all over the world for its efficient utilization of milk, a sensitive raw material – but is equally known for gentle product handling and sparing use of resources. With the development of the new generation of **eco** separators, dairies with lines for small to medium-scale throughput capacities can also benefit from this technology leader's expertise in process technology and its power to innovate. The new product family covers all the central processes and every detail is customized to suit the requirements of dairies.

Facing the future with flexibility


The **eco** family comprises self-cleaning separators for clarifying, skimming and bacteria removal. The central component parts – of bowl, hood, frame, motor and control unit – are identical for all machines.

At the same time, the number of wear parts has been considerably reduced. This makes the separators easier to handle and spare parts easier to stock, reduces delivery times, minimizes servicing complexity and makes process management easy and reliable.

Maximum future-proofing is built in too, with the separators incorporating capacity reserves. Depending on type, product and field of application, this allows throughput capacities to be increased by up to 40 percent if required. The new generation is rounded off with features such as the motor with frequency converter and use of the flat belt drive as standard. More efficiency and economy from scratch: that's GEA Westfalia Separator **eco**.

Self-cleaning separators for clarification, skimming and bacteria removal:

- ✔ Short delivery times, designed for the capacity range 3000 – 15,000 l/h
- ✔ Uniform technology for all machine types
- ✔ CIP (cleaning-in-place) feature
- ✔ Flat belt drive
- ✔ Drive with frequency converter
- ✔ Reduced energy consumption
- ✔ Simplified servicing – increased availability
- ✔ Comprehensive upgrading options
- ✔ Available as individual machines or skid units (frame-mounted incl. control unit)



All separators of the **eco** generation are available as skid units incorporating the control system.

Gentle Product Handling, Precision Separation, Hygiene

Separators of the GEA Westfalia Separator **eco** series represent the state of the art in machine engineering. Maximum support is provided for product quality, separation precision and hygiene.

Whether being used for clarification, skimming or bacteria removal, all the separators of the **eco** generation are equipped with the GEA Westfalia Separator **hydrosoft** feed system. For milk, this means minimal feed pressure, gentle product feed, minimal shear forces and thus maximum separation precision. The hydrohermetic seal means that air cannot be trapped in the product. The system does not use any high-maintenance mechanical seals and needs no additional cooling water.

Simple integration

The separators can be integrated simply in the process line. The machines are perfectly customized to a customer's requirements in terms of output and pressures required. This means optimum energy utilization and gentle handling of the product.

Partial and/or total ejection

In addition to partial ejection in adjustable quantities, total ejection of the bowl is also supported. Total ejection cleans all the surfaces inside the bowl by passing extremely high flow rates over them. This is also important for chemical CIP cleaning of the line and separator: total ejection during CIP ensures an optimum result.

All systems operate in compliance with the latest hygiene standards, so GEA Westfalia Separator **eco** can prove that gentle product handling and a high yield are not mutually exclusive.



Clarification, Skimming and Bacteria Removal of Milk and Whey

The GEA Westfalia Separator **eco** family meets all the requirements and stands for premium quality and high yield.

First choice for milk clarification:

GEA Westfalia Separator **ecoclean**

This new separator meets every requirement for reliable milk clarification. The separation of so-called NMS (non-milk solids) is a priority when clarifying and purifying milk. It is absolutely essential to remove these substances in order to achieve the milk quality desired.

ecoclean is a clarifier designed specifically for separating solids from liquids. The special design of this machine means it achieves the optimum separation rate for impurities, with separated solids being discharged discontinuously by ejection systems during the process.

Perfect skimming:

GEA Westfalia Separator **ecocream**

Whether milk or whey – this skimming separator stands for first-class quality and a high yield. Milk is separated to obtain cream and skim milk. The majority of dairies throughout the world work on the same principle: the raw milk is heated first and then skimmed. The **ecocream** skimming separator is perfectly designed for this task.

The gentle handling of the raw milk and the high degree of separation precision guarantee optimum product quality with a high yield. At the same time, **ecocream** ensures that the set cream fat content and other milk-specific parameters are reliably maintained whatever the throughput. This gentle product handling and separation precision are complemented by optimum hygiene. Overall, these properties make the new separator the first choice for all skimming processes.

Reliable bacteria removal:

GEA Westfalia Separator **ecoclear**

This bacteria removing separator helps dairies separate off undesired germs to produce high-quality dairy products. NMS (non-milk solids), somatic cells, bacteria and undesired microorganisms are all a hazard to the various processes in the dairy industry. In drinking milk manufacture, aerobic spore-formers such as *Bacillus cereus* have a negative impact on the shelf-life of the product by causing sweet-clotting.

Bacteria removal is especially important in the production of cheese milk in order to prevent late blowing in the cheese. Perfect bacteriological quality is achieved by removing those spore-formers which are not inactivated sustainably by conventional milk heating. The **ecoclear** separator performs these tasks safely and reliably. The result is the highest possible quality from which dairies benefit in the production of an enormous range of dairy products.

Value adding factor protein:

GEA Westfalia Separator **proplus**

With **proplus**, the company is offering a process for protein maximization. Thanks to a special fluid mechanics concept, we have been successful in significantly reducing the frequency of the ejections and hence the potential loss of valuable protein. Every gramme of additional protein means hard cash. For this reason, **proplus** has already established itself worldwide in skimming and bacteria removal. This profitable process is also available for **ecocream** and **ecoclear**!





“Keep It Safe – but Simple”

Flat belt drive used as standard for reliable, cost-optimized production.

“Keep it safe – but simple” is a principle also applied to the drive design of the new family of separators. None of the **eco** separators has a gear and clutch, being equipped as standard with a flat belt drive instead. This reduces the number of components by 30 percent, with the availability, greater efficiency and maximum reliability of the drive system simultaneously making it a convincing feature. It runs extremely reliably, quietly and smoothly.

Benefit which is easy to calculate

Time and cost benefits result in particular from considerably reduced servicing complexity. Dispensing with a gear and clutch means fewer roller bearings and prevents wear on clutch parts. Servicing and wear part costs are considerably less as a result.

Compared to conventional hollow-shaft drives, the machines in the **eco** family save two thirds of servicing time and increase availability and productivity accordingly.

Right from the outset, therefore, the service-friendly flat belt drive of this generation of separators secures a benefit which is easily calculated:

- ✔ Increased availability and productivity
- ✔ Greater degree of efficiency
- ✔ Great operational reliability
- ✔ Simple, cost-optimized servicing
- ✔ Reduced energy consumption
- ✔ Very quiet running

Frequency Converters: Precisely the Motor Output Required

Motors with a frequency converter are standard in GEA Westfalia Separator **eco** separators. This optimizes separator start-up, saving up to 10 percent electricity compared to conventional drives.

Drives without a frequency converter operate with a clutch. In the start-up phase, they need up to 2.5 times rated motor current. The associated current peaks require sturdier wiring and more complex fuse and overload arrangements – and can incur additional costs. These drawbacks do not arise with **eco** separators because all the drives in this family are equipped with a frequency converter. This means that a clutch can be dispensed with, and fewer wear parts and servicing are required. The frequency converter allows the motor to be provided with exactly the right combination of voltage and frequency by means of a precisely adjustable start-up time. The constant transmission of power ensures gentle acceleration and thus reduced wear.

Variable current limiting

The frequency converter allows the current to be limited on a variable basis and also enables bowl speed to be changed easily. The system allows current in a frequency range of 50 to 60 Hz and a voltage range of 240 to 400 V to be supplied. The frequency converter thus permits flexible adaptation to all customer requirements.

- ✔ Gentle acceleration
- ✔ Reduced wear
- ✔ Electricity saving averages 10 percent
- ✔ Frequency and voltage range adapted flexibly to suit local power supply



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GEA Group is a global engineering company with multi-billion euro sales and operations in more than 50 countries. Founded in 1881, the company is one of the largest providers of innovative equipment and process technology. GEA Group is listed in the STOXX® Europe 600 Index.

GEA Mechanical Equipment

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