



Efficient Dairy Separation

with Disk Stack Hermetic Design Separators



Neologic Engineers is an Master Integrator of Alfa Laval. The unique range of Alfa Laval disc stack separators, Sold & Serviced by Neologic Engineers.

Also, available for efficient integration of the following dairy processes:



- Hot Milk Separation – H Models
- Cold Milk Separation – C Models
- Bactofuges – BB & BM Models
- Whey Separation – W Models
- Milk & Whey Clarification – D Models
- Anhydrous Milk Fat Separation – A Models
- Solid Bowl Separation & Clarification



Gustav de Laval invented the original disc stack separator in 1883. Since then, Alfa Laval's range of separators has been setting the standard for gentle and Efficient separation. They meet the strictest performance and hygiene requirements of modern dairies and are available for a wide range of applications and capacities.

(Note: Alfa Laval Dairy Separators can be broadly categorized into two types viz "Self-Cleaning Separators" & "Solid Bowl Separators".)

Hermetic Design means Gentle Acceleration and Powerful Efficiency

Neologic Engineers

Neologic Engineers build modular units in their own factory having separator for all applications like clarification, separation, bactofugation and others.

For a wide range of dairy applications, Alfa Laval's unique Hermetic Design prevents degradation of the product along with high separation efficiency and process flexibility. This is thanks to a patented airtight disk stack bowl that enables gentle acceleration of shear sensitive agglomerates for improved product quality. At the same time, the special bottom-fed design drastically reduces power consumption for truly powerful energy efficiency.

High separation efficiency

In a hermetic separator, the separability of fat and impurities is more efficient, compared to other designs on the market. This is a result of the gentle product treatment and the fact that the product exits from the center of the bowl. The Hermetic Design not only enhances skimming and cleaning efficiency but it also offers the most energy-efficient separator on the market, with a 30% power reduction.

No degradation of product quality

Thanks to the Hermetic Design, the separator treats milk very gently. The hermetic seals minimize the intake of oxygen and, combined with a smooth acceleration in the hollow rotating spindle, help maintain the sizes of the fat globules and particles. The Hermetic Design ensures a dairy product without impurities and no increase of free fatty acids, which might otherwise result in bad flavour, taste, and a shortened shelf life.

High production flexibility

Each separator, clarifier, and Bactofuge unit with Hermetic Design can handle a wide range of capacities without mechanical modification. Likewise, a single unit can efficiently handle a wide capacity range as well as varying milk quality. The key to this flexibility is the use of efficient product discharge pumps, a completely filled bowl, and variable speed control. For instance, the cream fat content in a hot milk separator can be increased to more than 60% with maintained skimming efficiency simply by adjusting the backpressure.

RELIABLE PERFORMANCE FOR

Hot Milk Separators

The objective is to separate the globular milk fat from the serum, the skimmed milk. The cream output from Alfa Laval H-model Disc Stack Separators can have a fat content of up to 60% without compromising the skimming efficiency, thanks to the Hermetic Design. The hot milk skimming efficiency is commonly achievable down to 0.04%. As in all separation, the result is influenced by several parameters.

Model	Flow Rate l/h Skimming	Flow Rate l/h Max	Motor size (kW)
H10	7,000	10,000	15
H15	10,000	15,000	15
H20	12,000	15,000	18,5
H525	15,000	25,000	18,5
H530	20,000	30,000	18,5
H535	25,000	35,000	22
H540	30,000	40,000	30
H845	30,000	40,000	22
H855	35,000	55,000	30
H865	45,000	65,000	37
H875	55,000	75,000	45
H885	60,000	80,000	45
H8100	65,000	85,000	45

Cold Milk Separators

When heating milk is undesirable, but long run times are desirable, the Hermetic Design of Alfa Laval C-model Disc Stack Separators makes it possible to separate cold milk at 4–15 °C. The viscosity and characteristics of cream at low temperatures make Hermetic Design the only feasible form of separation for this task – thus becoming the industry standard. The performance of a cold milk separator is highly dependent on milk quality, operational temperature, flow rate, process control, and selection of separator size. The fat content of skimmed milk, for example, can go down to 0.08% at 4 °C.

Model	Flow Rate l/h Skimming	Motor size (kW)
C10	10,000	15
C515	15,000	18,5
C520	20,000	18,5
C830	30,000	30
C835	35,000	30
C840	40,000	30
C845	45,000	30
C850	50,000	37
C855	55,000	37

EVERY DAIRY APPLICATION

Whey Separators

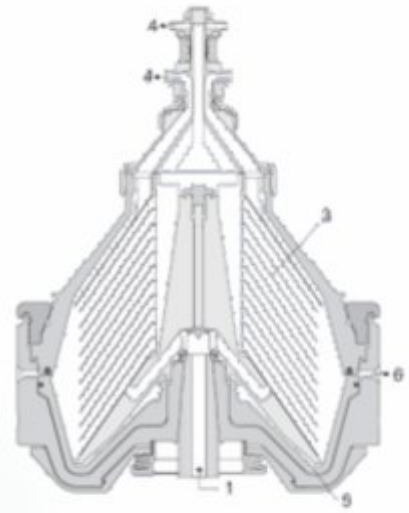
The purpose of whey separation is to recover fat and make the skimmed whey as free from fat as possible, as well as to facilitate downstream treatment and enhance the value of the whey. When pre-clarified, the whey separation becomes more efficient, resulting in a low-fat content in the skimmed whey, down to 0.03%, depending on whey type. In contrast, hermetic separators will produce high-fat whey cream with a fat content above 30% even at temperatures below 35 °C.

Model	Pre Filtered l/h	Pre Clarified l/h	Installed Motor Power (kW)
W10	7000	7000	15
W15	10,000	11500	15
W515	15,000	16500	18,5
W520	20,000	22000	18,5
W525	25,000	27500	30
W830	30,000	35000	30
W840	38,000		30
W850	50,000		37
W860	60,000		45
WD515	15,000		18,5
WD520	20,000		22
WD525	25,000		30
WD840	35,000		30
WD845	40,000		37
WD850	45,000		37

Bactofuges

Alfa Laval Bactofuge Units are traditionally used for pre-treatment of cheese milk, where butter acid spores (anaerobic spores) are typically removed. Bactofuge units are also used to enhance the quality of powders, consumption milk, and cream where aerobic spores (e.g. bacillus cerus) are typically removed. The efficiency is stated as a percentage reduction of the incoming level of bacteria and spores. Generally, efficiency can rise to 99%. For installations with a high demand for efficiency, two or more units can be installed in a series.

Model	Flow Rate l/h Nominal	Flow Rate l/h Max	Installed Motor Power (kW)
BB10	5,000	10,000	15
BB520	15,000	20,000	18,5
BB530	20,000	30,000	30
BB835	25,000	35,000	30
BB845	35,000	45,000	37
BB855	40,000	55,000	37
BM520	10,000	20,000	18,5
BM530	20,000	30,000	30
BM830	25,000	35,000	30
BM840	35,000	40,000	37
BM850	40,000	50,000	45



Milk & Whey Clarifiers

The main purpose of milk clarification is to remove impurities. While many clarifiers can only be used for either hot or cold milk, the Alfa Laval D-model disc stack separator can process both. The efficiency of the removal of smaller particles increases with the temperature, and the most efficient reduction of cells and bacteria is achieved at 50–60°C. To maintain optimum fat separation and long run times, it is necessary to remove cheese fines from the whey before it reaches the whey separator. Installing an Alfa Laval D-model Disc Stack Separator to take care of the clarification upstream of the whey separator is the most efficient way to remove cheese fines. Clarification normally takes place at the same temperature as whey separation i.e. at vat temperature. Flowrate, fine content, and production hours are important parameters when selecting a clarifier.

We provide advanced technology for next level productivity and safety

Model	Flow Rate l/h Nominal	Installed Motor Power (kW)
D15	15,000	18,5
D20	20,000	18,5
D25	25,000	18,5
D530	30,000	18,5
D535	35,000	22
D545	40,000	30
D845	45,000	30
D860	60,000	37
D870	70,000	45

Anhydrous Milk Fat / Butter Oil Separators

Anhydrous milk fat (AMF) is obtained from fresh cream or melted butter and has a milk fat content exceeding 99.8%. Anhydrous Milk Fat is concentrated in several steps up to 99.5% and is then vacuum treated. Butter oil is produced from cream or butter (stored or fresh) of varying age and contains a minimum of 99.3% milk fat. The input cream or butter (stored or fresh) determines the number of steps and processes required. The table below indicates the machine models recommended for the process steps. Do get in touch with us for a discussion on the process steps for your raw material and other customized requirements.

Model	Motor Size (kW)	Final Concentration	
		from cream, lime capacity kg oil/h	from butter, lime capacity kg oil/h
A2	15	2000	2300
A504	18.5	4000	5000
A506	22	6000	8000
A508	30	8000	10000
A814	30	14000	14000
A816	37	16000	16000



Solid Bowl-Hermetic Design Dairy Separator and Non-Hermetic Ghee Clarifiers (Requiring Manual Cleaning)

These Alfa Laval solid bowl Dairy centrifugal separators have been designed for separation/clarification of milk under Hermetic conditions. **Also, sold & serviced by Neologic Engineers.**

Milk is fed under pump pressure to the rotating bowl through a rotating hollow spindle from the bottom and is gradually speeded up to the same rotational speed as the bowl itself. Due to the unique hermetic design the full separator from inlet to the outlet remains completely filled with milk under pressure. Separation takes place under hermetic conditions inside the bowl in which there is no external air mixed and the cream (light phase) and skim-milk (heavy phase) are discharged under pressure through two outlets on the Separator top frame hood.

Full Support

To ensure high performance with the lowest total cost of ownership throughout the separator's long product lifecycle, Neologic Engineers can provide a full range of original spare parts and support services.

Model	Application	Flow Rate (l/h)
S2181M	Warm Milk Separation	5000
S3191M	Warm Milk Separation	10000
VLB 103*	Ghee Clarification	1000
VLB 206*	Ghee Clarification	2000

*Non-Hermetic

Unique features

- | Separation without foam formation
- | Gentle treatment of milk thus avoiding breaking of fat globules
- | High efficiency of skimming & clarification
- | Product discharge under pressure
- | Simple and reliable cream regulation within a wide range of fat percentage



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