

MILK AND BY-PRODUCTS

REDA
Food Processing Plants



RE-B Bacteria separators



REDA BACTERIA SEPARATORS

The modern and efficient solution for milk hygienization and cleaning



Introduction

Bacteria removal is a mechanical separation process in which a specially designed centrifuge is used to separate the microorganisms from the milk.

Since bacteria and spores have a significantly higher density than the milk, the mechanical effect of the bacteria separation makes it a particularly effective application for their elimination.

Since these spores are also resistant to heat treatment, the bacteria removal becomes a very useful complement to thermization, pasteurization and sterilization of milk.

Originally, the bacteria removal has been applied to reduce the problem of late blowing of cheese. Then its main use has been to complement the process of pasteurization or thermization of milk for the production of cheese, milk powder and whey milk intended for baby foods.

More recently, the application of bacteria's separation on drinking milk (ESL milk) has generated a new interest since this process can meet the needs of the modern distribution market that requires a longer shelf life than the traditional fresh pasteurized milk.

TECHNICAL CHARACTERISTICS

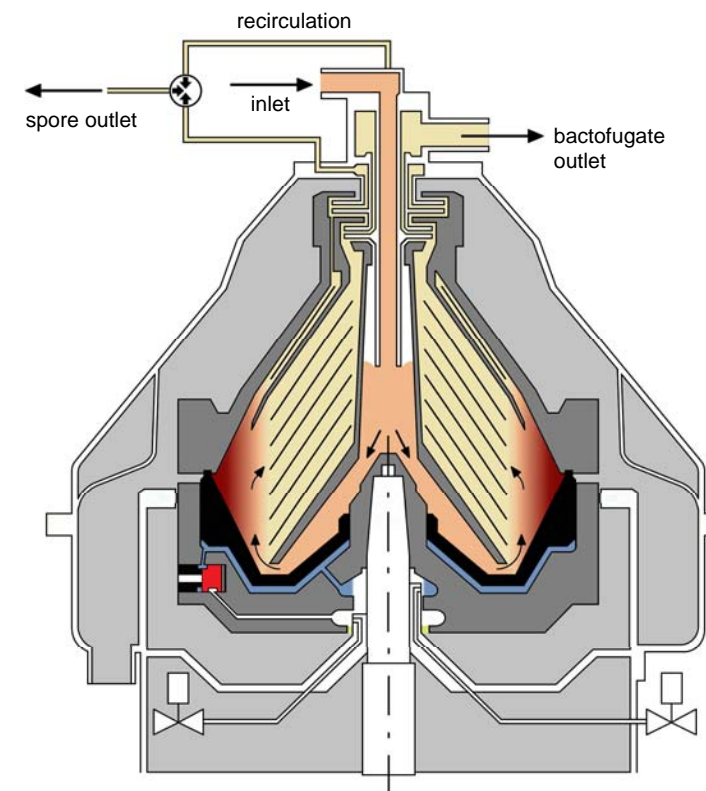
- Automatic solids discharge systems during production with intervals and times set by the PLC.
- Motor control with frequency converter (FREQ-CLUTCH) for fast, progressive and silent motor startings, with optimization of operating power for reduction of energy consumptions.
- Models from RE50B to RE150B adopt the direct gear drive system without friction thanks to the frequency converter and the special connection between vertical shaft and horizontal shaft (SOFT-SPINDLE system).
- Bigger size models, starting from RE200B, are equipped with belt drive (FREE BELT system).
- PRS (Protein Recovery System) to reduce the losses of milk during discharges thanks to the new design of the sludge chamber, featuring a larger volume to increase the sludge accumulation during the treatment phases. This means longer discharging times, with a lower number of discharges and, consequently, less losses of milk during the discharges.
- Minimum number of gaskets subject to wear (FREE SERVICE).
- Electrical panel with PLC and control through Operator Panel "touch screen" type.



mod. RE200B



mod. RE120B



Bacteria removal systems

REDA's bacteria separators feature two types of working systems, that are freely selectable by the operator:

- **One-phase system (Recirculation)**
The full bacteria product is continuously remixed at the inlet in order to be reconcentrated. The separator needs higher frequency in the discharges but the total product loss is reduced in comparison with the system without recirculation.
- **Two-phase system (maximum reduction of bacterial and sporigen charge)**

This system has two outlets at the top and no-recirculation: one for continuous discharge of the heavy bacteria phase (2%-5% of the flow), and one for the milk with reduced bacterial charge.

The heavy bacteria phase can be later reshuffled after appropriate sterilization treatment.



Advantages of REDA's bacteria removal

- High separation and clarification efficiency. The percentage of reduction of spores and bacteria in milk can be summarized as follows:
 - > 80% reduction in the total bacterial count;
 - > 95% reduction in the aerobic spores count;
 - > 98% reduction in the anaerobic spore count.
- No breakage of the fat globules during treatment.
- Continuous process without the need of intermediate cleaning, therefore with long production cycles.
- Silent functioning and minimal maintenance thanks to the FREQ-CLUTCH system combined with the SOFT-SPINDLE (for direct drive) or the FREE BELT (belt drive) system.
- Suitable to be connected to an existing CIP cleaning unit.

PRS+ PROTEIN RECOVERY SYSTEM

To further improve the efficiency of the Protein Recovery System (for the reduction of milk losses during the discharge), the "PRS+" system is also available. This device has a very precise control system and is very easy to install since it comes pre-mounted on a stainless steel skid.

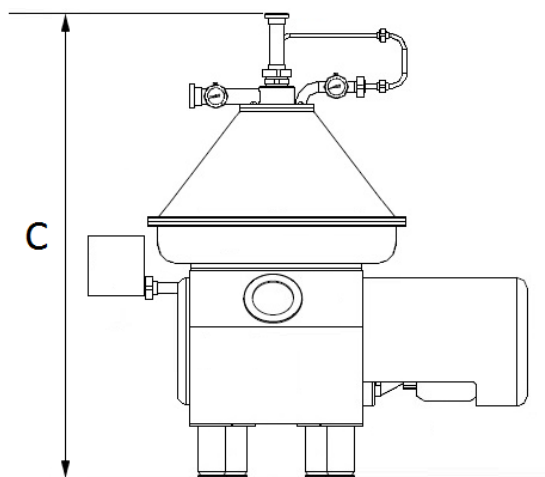
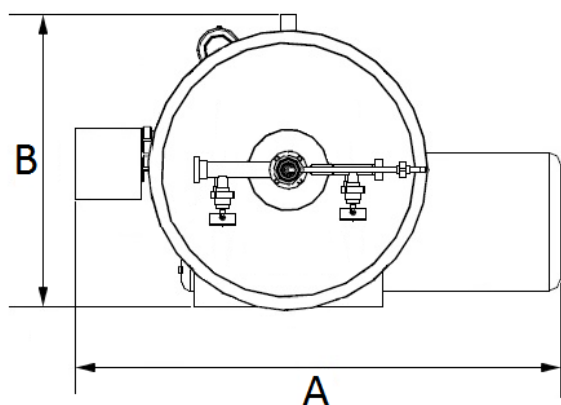
Advantages of PRS+ system

- No milk losses during the discharges.
- Less discharges and higher concentration of solids in the sludge.
- Longer intervals between a discharge and the next one.



DATA SHEET

MOD.	BACTERIA REMOVAL	CLARIFYING	A (mm)	B (mm)	C (mm)	Motor KW	Weight Kg
RE50B	5.000	8.000	1100	720	1100	9	760
RE70B	7.500	10.000	1240	760	1290	15	780
RE100B	10.000	12.000	1240	760	1290	15	800
RE120B	12.000	15.000	1540	910	1380	18,5	1250
RE150B	15.000	20.000	1650	1660	1050	22	2200
RE200B	20.000	30.000	1650	1680	1050	30	2350
RE250B	25.000	35.000	1680	1050	1700	30	2450
RE300B	30.000	38.000	1680	1050	1780	37	2550
RE350B	35.000	40.000	1820	1120	1890	37	2600



Remarks:

- Flow capacities are expressed in liters/hour.
- Models RE200B, RE250B, RE300B and RE350B are endowed of belt drive.
- The technical data contained in this brochure are indicative and not binding. REDA reserves the right to change/adapt the technical and dimensional information of the products included in this presentation without notice and without liability to third parties.



Example of REDA line for "ESL Milk" of 10,000 L/h with milk separator, bacteria separator and in-line automatic standardizer