

CNB 215-01-076

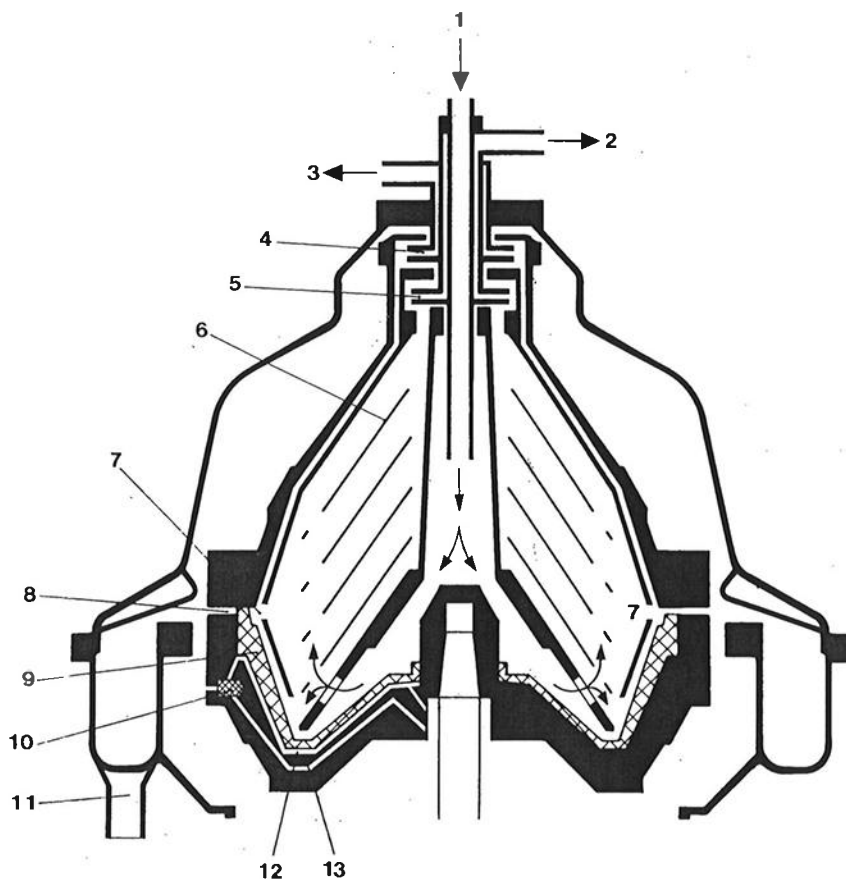
### **Function**

Removal of bacteria from and clarification of cheese milk. The degerminated milk and the bacteria concentrate are discharged under pressure by centripetal pumps. Bacteria concentrate is, in addition, ejected by partial de-sludging of the bowl at pre-determined intervals while the bowl is rotating at full speed.

### **Field of application**

Cheese factories  
Processing temperature should preferably be 50–60° C.

# Operating principles and constructional features



- 1 Feed
- 2 Degerminated milk outlet
- 3 Bacterial concentrate outlet
- 4 Centripetal pump for concentrate
- 5 Centripetal pump for degerminated milk
- 6 Discs
- 7 Concentrate space
- 8 Concentrate ejection ports
- 9 Piston
- 10 Piston valve
- 11 Concentrate outlet
- 12 Closing chamber
- 13 Opening chamber

## Bowl

This centrifuge is equipped with a self-cleaning disc-type bowl incorporating a hydraulically operated piston (9) for opening and closing the ejection ports of the bowl. The cheese milk flows into the centrifuge bowl through inlet (1) and is separated in disc set (6) into bacteria concentrate and degerminated milk. The degerminated milk flows towards the center of the bowl and the bacteria concentrate to concentrate space (7) at the bowl periphery.

Both components are discharged without foam and under pressure by centripetal pumps (4,5) through outlets (2 and 3). The concentrate volume can be adjusted by varying the concentrate discharge pressure. In addition to the continuous discharge of the bacteria concentrate by centripetal pump (4), partial de-sludging of the concentrate space in the bowl is performed at periodic intervals. During de-sludging the concentrate is instantaneously ejected from the bowl through ejection ports (8). The de-sludging cycle is initiated and controlled by a timing unit. The consumption of operating water required for de-sludging is approx. 50 litres/h.

## Automatic de-sludging

For automatic bowl de-sludging a specially designed timing unit, type TVE 2-M or TVE 2-M-S, should be used.

During milk processing, this timing unit controls partial de-sludging of the bowl at predetermined intervals, without interruption of the milk flow.

During cleaning-in-place, total de-sludging can be initiated by pressing the respective push button. When total de-sludging is performed, the supply of products is automatically stopped.

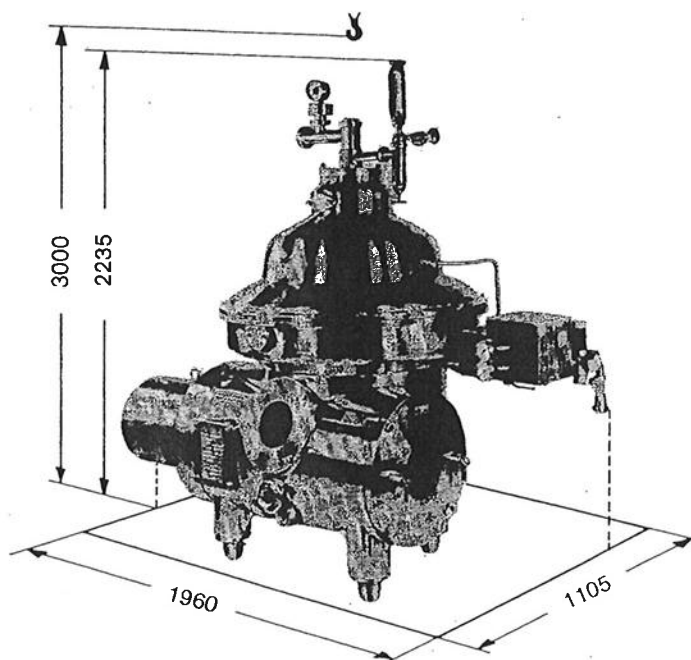
The timing unit is also equipped with control elements for setting the constant pressure valve. All control elements of the TVE 2-M timing unit may be incorporated in the main control panel of the plant.

## Feed and discharge

Feed and discharge are through closed pipe systems with connections conforming to DIN 11851 or ASA Standards. The degerminated milk and the bacteria concentrate are discharged without foam and under pressure by centripetal pumps. A flowmeter in the feed line allows checking of the product flow rate. The milk discharge line (2) incorporates a constant pressure valve and a pressure gauge for adjusting the operating pressure. The concentrate discharge line (3) is equipped with a flowmeter, a regulating valve and a pressure gauge for adjusting the concentrate volume. There are no seals between the feed and discharge connections and the rotating bowl.

# Technical data

(Bacteria-removing centrifuge)



Dimensions in mm

## Technical data

Bowl	
Speed	4700 min <sup>-1</sup>
Total bowl volume	60 litres
Sediment holding space	16 litres
Three-phase AC motor	
Power	37 kW
Speed at 50 Hz	1500 min <sup>-1</sup>
Speed at 60 Hz	1800 min <sup>-1</sup>

## Weights and shipping data

Total weight of centrifuge	net 2560 kg
Weight of centrifuge with motor and accessories, but without bowl	net 1635 kg gross 1960 kg
Weight of bowl	net 1050 kg gross 1140 kg
Packing case dimensions (L x W x H)	
Frame with motor	1850 x 1400 x 1720 mm
Bowl	870 x 870 x 930 mm
Shipping volume	5.17 m <sup>3</sup>

## Capacities\*

Bacteria removal	15000–25000 litres/h
Feed pressure (without flow constrictor in feed line)	0.5 bar
Max. discharge pressure of degerminated milk	4 bar
Max. discharge pressure of bacteria concentrate	2 bar
Bacteria concentrate volume in % of throughput	2–4 %

\* The capacity depends on the bacteriological characteristic and the temperature of the milk.

Subject to modification