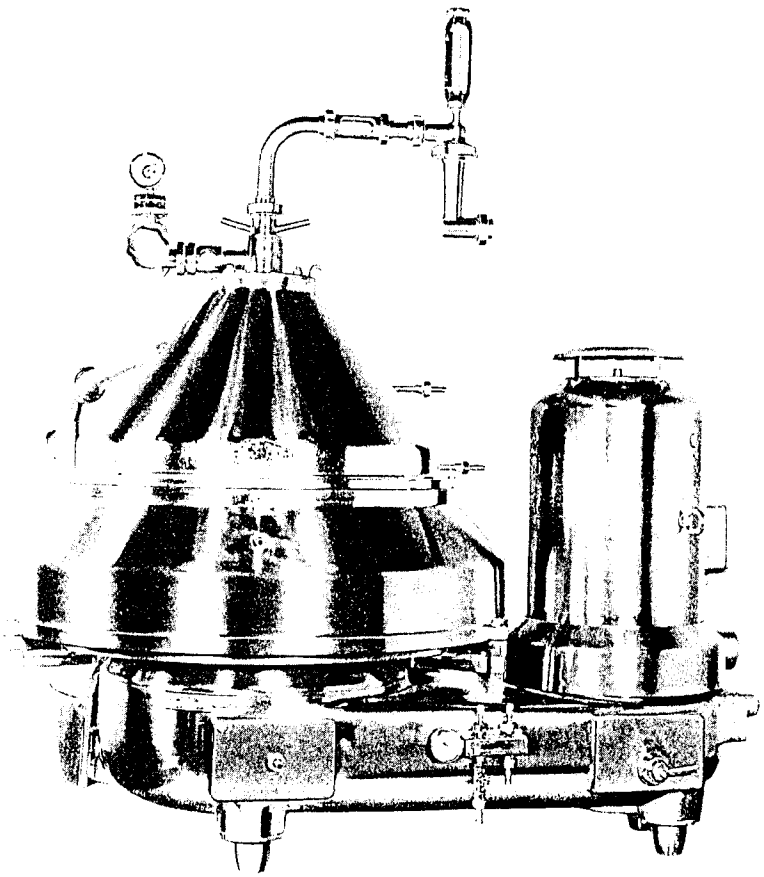
Data Sheet

KDA 18

Nozzle Type Separator



KDA 18-02-177

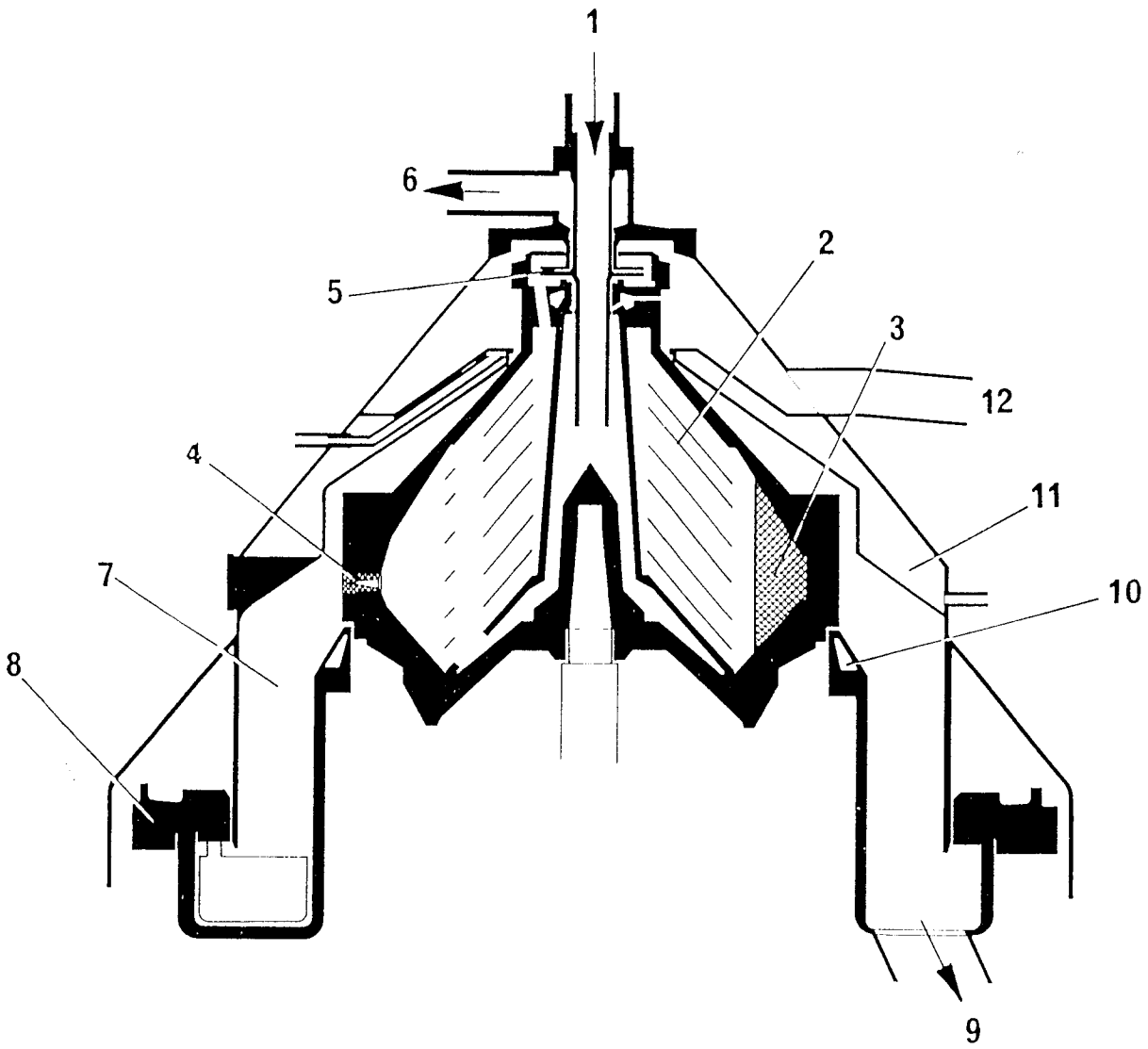
Function

Continuous production of fresh cheese (quark) by the conventional method and by the Westfalia Thermo process and of cream cheese with up to 50 % fat in D. M. The protein contained in the coagulated milk is separated from the whey in the rotating bowl and is continuously discharged through nozzles.

Application

Cheese factories.

Operating principles and constructional features



1 Feed
2 Discs
3 Segment insert
4 Nozzles
5 Centripetal pump
6 Whey outlet
7 Concentrate catcher
8 Drive ring with scraper blades
9 Quark outlet
10 Brake ring
11 Hood
12 Overflow

Bowl

This separator is equipped with a disc-type bowl which in turn is provided with nozzles (4) on its outer rim to allow the quark concentrate to be discharged.
The segment insert (3) prevents the accumulation of protein between the nozzles.
There is no loss of protein and the bowl can also be cleaned in place. The product (coagulated milk) enters the bowl through inlet (1) and is separated in the disc set into whey and protein (quark). The whey is then fed by the centripetal pump (5) to the outlet (6). The separated protein is discharged continuously from the nozzles (4) into the concentrate catcher (7). An opening in the concentrate catcher which remains plugged while the machine is operating allows the nozzles to be replaced without having to remove the hood.

Feed and discharge

The separator is equipped with a closed system of feed and discharge pipes with connections conforming to DIN 11851. The whey is discharged foamfree and under pressure via a centripetal pump (5). Sight glasses are built into the feed and discharge lines. The pressure in the discharge line can be adjusted by a regulating valve and a pressure gauge. The feed rate is indicated by a flowmeter in the feed line.

Concentrate discharge

The quark which is discharged into the concentrate catcher (7) is conveyed to the outlet (9) by scraper blades which are attached to a low-speed drive ring (8). By using these scraper blades, it is possible to produce quark with a high dry matter content (approx. 24 % abs. dry) over long operating periods without any trouble.

Cooling

The hood (11) and the brake ring (10) are cooled by ice water. Protein is thus prevented from caking.

Cleaning-in-place

After the separation process, the Westfalia CIP unit RAPA 200 can carry out a programmed automatic chemical cleaning process. The cleaning solutions (special alkaline and acid solutions) are circulated through the system.

Automatic monitoring

The separator is provided with a vibration control unit (Vibrocontrol E4) to monitor any vibrations which might occur due to the CIP process, power failures or any other reason. The Vibrocontrol unit consists of the vibration sensor on the separator and a control device in the motor control cabinet. If any vibrations are picked up, a signal is passed from the sensor to the control device in the control cabinet.
If the vibrations become critical, an automatic hooter is sounded, and the separator is switched off. In addition, a water valve in the product feed opens automatically.
This control unit prevents the machine from being damaged in the event of any vibrations occurring.

Frame and drive

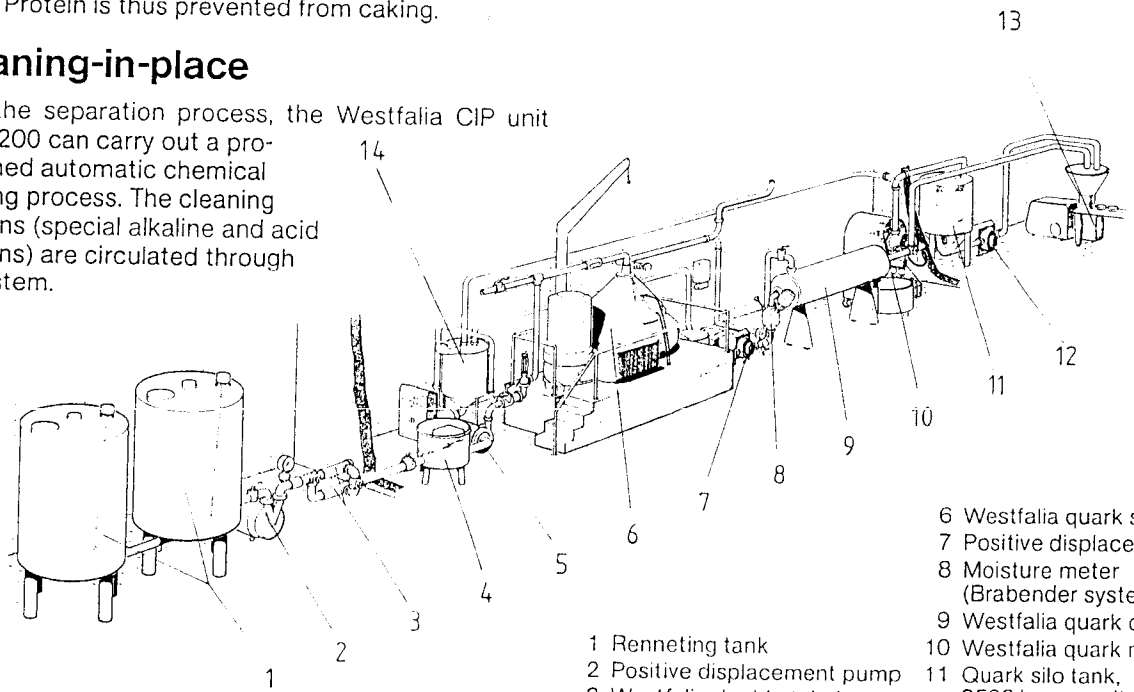
The cast iron frame is clad with stainless steel and houses an oil level sight glass.
The machine is driven by a vertically mounted flange type three-phase motor (type V 1, IP 55 enclosure), specially designed for controlled torque starting with star delta switching. Power is transmitted directly to the bowl spindle by means of narrow V-belts.
All bearings are automatically lubricated from a central oil sump.

Construction materials

All parts coming into contact with the product are made of stainless steel.

Production line for the continuous manufacturing of fresh cheese (quark)

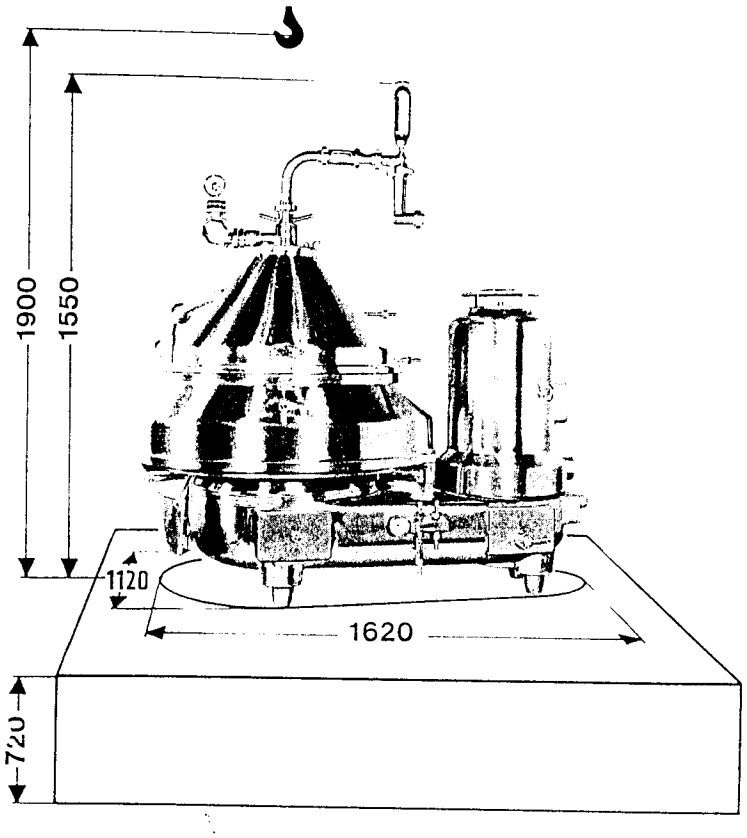
With slight modifications, this line can also be used to produce cream cheese.



1 Renneting tank
2 Positive displacement pump
3 Westfalia double tubular strainer
4 Float-controlled balance tank
5 Centrifugal pump
6 Westfalia quark separator*
7 Positive displacement pump
8 Moisture meter (Brabender system)
9 Westfalia quark cooler
10 Westfalia quark mixer
11 Quark silo tank, 2500 kg capacity
12 Positive displacement pump
13 Packing machine
14 Westfalia C-I-P unit

* The quark separator is installed on a raised foundation of about 2 m length, 2 m width and 0.72 m height.
The dimensions can be adapted to local requirements.

Technical data



Dimensions in mm

Technical data

Bowl		
Speed	5500	min^{-1}
Number of nozzles	8	
Max. discharge pressure of centripetal pump	4.5	bar
Three-phase motor		
Power	15	kW
Speed at 50 Hz	3000	min^{-1}
Speed at 60 Hz	3600	min^{-1}
Scraper blade equipment		
Motor power	0.75	kW
Speed	83	min^{-1}

Weights and shipping data

Total weight of separator	net	1470	kg
Weight of separator without motor and bowl	net	1035	kg
	gross	1185	kg
Weight of bowl	net	285	kg
	gross	325	kg
Weight of motor	net	350	kg
	gross	410	kg
Packing case dimensions (L x W x H)			
Frame		1800 x 1320 x 1400	mm
Bowl		660 x 660 x 600	mm
Motor		1100 x 660 x 760	mm
Shipping volume		4.1	m^3

Capacity*

Quark output	up to	1500	kg/h

* The hourly capacity depends on the composition and temperature of the coagulated skim milk.

WESTFALIA SEPARATOR

Westfalia Separator AG

4740 Oelde 1/W.-Germany · Telegram Address: Westfalia Oelde
Phone: (02522) 771 · Telex 89474