

# Self-Cleaning Hermetic Milk Separator MRPX 418 HGV

## Application

Separation, standardisation, and clarification of hot milk.  
Designed for continuous operation and CIP.

## Working Principle

The separator has the following distinguishing features:

1. Hermetic, airtight inlet and outlets, 2. Automatic sludge discharge and 3. Cleaning-in-place.

**1. Hermetic Inlet.** Milk is fed into the separator bowl from the bottom through a stationary pipe, an inlet pump and a hollow spindle. An axial seal at the inlet effectively excludes air. The inlet pump increases the milk pressure sufficiently to force the milk under pressure through the separator to the outlets. Smooth acceleration of the milk under the liquid level gives a gentle treatment of the milk. This avoids shattering of fat globules and increases the skimming efficiency.

**2. Hermetic Outlets.** The skimmilk and cream are brought to the outlets under pressure and are discharged by means of outlet pumps. The diameters of the impellers are selected to give the outlet pressures required for the subsequent line.

**3. Automatic Sludge Discharge.** Sludge collecting in the conical sludge space of the bowl is automatically discharged at preset intervals. This is achieved by the sliding bowl bottom dropping briefly (< 1 second) allowing the sludge to be ejected without disturbing the feed. The opening and closing of the bowl is done with water and controlled by a programme system unit. The bowl opens for such a brief instant that only the sludge escapes (partial discharge). During cleaning the bowl may also be opened long enough for the entire contents to be ejected (total discharge).

**4. Cleaning-In-Place.** The machine is designed for cleaning-in-place and should be incorporated in the plant automatic CIP system. During the water rinsing phases of the cleaning cycle total discharges are effected, while during the detergent phases partial discharges only are used in order to save detergent. All parts of the separator in contact with milk as well as the outside of the bowl, the inside of the frame hood, and the sludge outlet are cleaned perfectly without the need for any manual labour.

An external system consisting of valves and pipings supplies cleaning liquid to the hermetic seals during the cleaning of the machine. This system is also used to flush the seals with water during starting and stopping of the machine when the feed has been turned off.

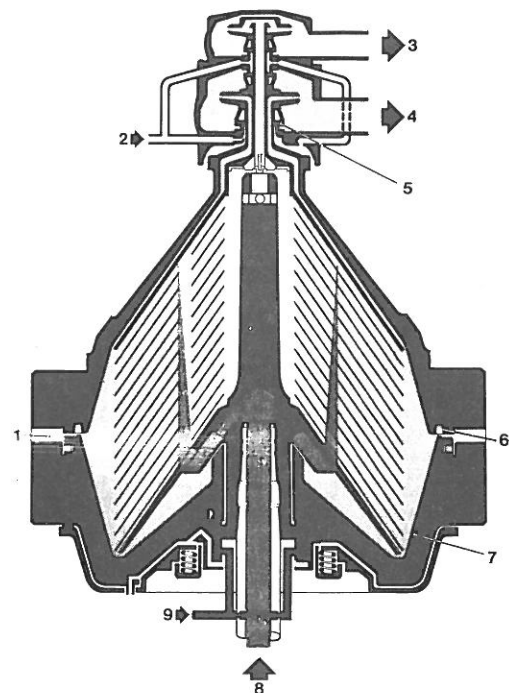
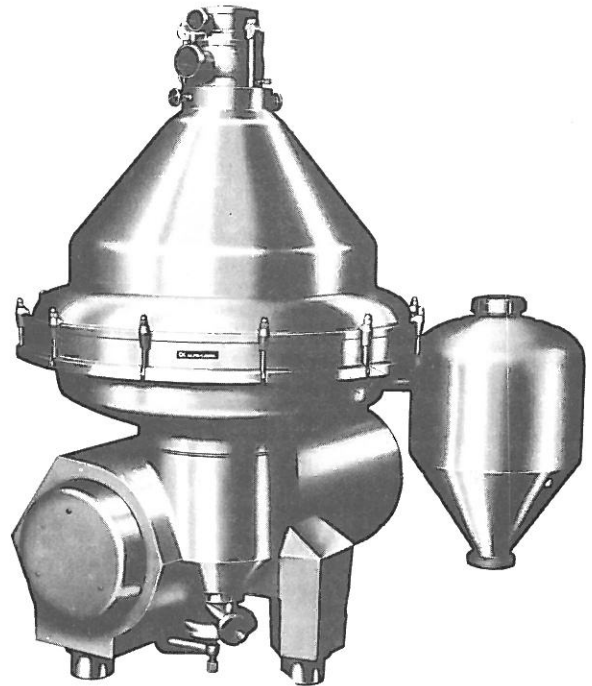
## Basic Unit

### Material

All product contact parts are of acid-resistant stainless steel. The motor casing and sludge cyclone are of stainless steel, and the lower part of the frame is clad in stainless steel.

### Standard Equipment

Included are motor, foundation plate, tachometer, and automatic air brake. A cyclone to absorb the kinetic energy of the ejected sludge is supplied. A spare parts kit is provided. External arrangement for cleaning and flushing the hermetic seals is also supplied.



- |                          |                           |
|--------------------------|---------------------------|
| 1. Sludge ejection ports | 6. Seal ring              |
| 2. Detergent supply      | 7. Sliding bowl bottom    |
| 3. Cream outlet          | 8. Milk inlet             |
| 4. Skimmilk outlet       | 9. Operating water supply |
| 5. Skimmilk outlet seal  |                           |

# MRPX 418 HGV-74 C

## Technical Data

### Capacity

Hot milk separation: 25,000 l/h. Standardisation and clarification: 33,000 l/h.

### Connections

Inlet 63.5 mm. Skimmilk outlet 63.5 mm. Cream outlet 38 mm. SMS unions.

### Motor

37 kW controlled-torque motor for 380/660 V, 50 or 60 Hz 3-phases AC. (Other voltages on request). The motor drives the separator bowl directly via a worm gear.

### Bowl Speed

4,165 rpm

### Sludge Space

17.2 l

### Water Consumption

Operating water: Intermittent flow of up to 3 l/s (max. 4 seconds) at a constant pressure of 400 kPa (4 kp/cm<sup>2</sup>) corresponding to 2 l per partial discharge, 12 l per total discharge, and up to 300 l/h for make-up water. Sludge-flushing water: 25 l per discharge. Water consumption for the hermetic seals during starting and stopping approx. 80 l. Transmission oil cooling water: up to 150 l/h.

**Air Consumption.** None by basic unit.

**Inlet Pressure.** 100 kPa, (1 kp/cm<sup>2</sup>).

**Outlet Pressure.** Up to 600 kPa (6.0 kp/cm<sup>2</sup>) in skimmilk and cream outlets.

**Overhead Hoist** for 15 kN (1,500 kp) is required.

## Auxiliary Equipment necessary for operation

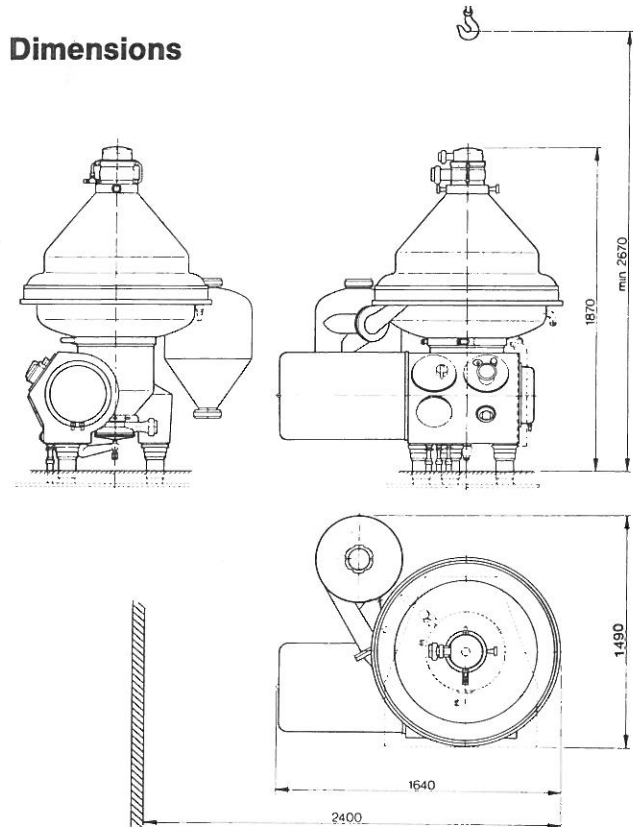
Item No	Description	Cannot be combined with item No	Requires item No	See PD No
1	Set of tools (for every three machines)			60759
3	Cream flow meter	13, 14		60686
4	Flow controller			60687
16.2	Constant pressure unit on skimmilk outlet	14	18.2	60692
18.2	Discharge programme system equipment DPE 74			60702
26	SRC - SMS - 63.5 - 20 - 10 valve, inlet		18.2	

## Optional Equipment

Item No	Description	Cannot be combined with item No	Requires item No	See PD No
2	Inlet flow meter			60685
13	Remixing device	3, 14		60688
14.1	Standardising device, manual	3, 13		60689
14.2	Ditto, automatic	3, 13, 16	18.2	60690
17	Constant pressure unit for operating water		18.2	60693
20.2	Remote speed control		18.2	60696
23	Y/D starter			
24	Tripping device			
25	Automatic leakage indicator		18.2	60652
28	Extra spare parts (for 6,000–9,000 hrs running)			

This product description does not constitute a binding quotation except in respect of such items and data as are stated in the quotation box (if any) applied to the top of page one.

## Dimensions



## Shipping Data

	Basic unit without motor	Motor only
Net weight, approx.	1,950 kg	360 kg
Gross weight, approx.	2,350 kg	440 kg
Volume, approx.	4.7 m <sup>3</sup>	0.6 m <sup>3</sup>

**ALFA-LAVAL**

No. PD 60762 E  
Reg. 33435  
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