

1. OUR PROPOSED SOLUTION

1.1. ecocream



Key features and benefits

The specified machine from the ecoplus range is designed for 10.000 l/h of milk skimming or 15.000 l/h of milk standardizing.

Learn more about separators for milk skimming:
<https://www.gea.com/en/products/separator-milk-skimming.jsp>

The proplus system enables extended ejection intervals to reduce the discharged product quantity and to increase the protein yield.

Calculate your annual savings with our GEA proplus calculator:
<https://www.gea.com/en/products/gea-proplus.jsp>

The IO control system is based on the latest Siemens hardware and provides a clearly structured display with self-explanatory icons. The user-friendly operation is supported by new features like assistant functions, online documentation for machine and control system and the possibility of saving screenshots.

Technical specification

1 separator ecocream for milk skimming	
rated capacity	10.000 l/h
maximum capacity	15.000 l/h for milk standardizing
feed pump	no additional booster pump is required
bowl	self-ejecting bowl with hydraulic operation
feed system	the Hydrossoft feed system ensures very gentle product handling without turbulences at low flow speed and low feed pressure leading to excellent product quality.
hydrohermetic seal	the feed system is hydraulically sealed and reliably prevents any air intake. It is designed without mechanical seals which would require increased service and additional cooling water.
product discharge frame	closed discharge with double centripetal pump cast iron, varnished in RAL 7037, grey
drive system	flat belt drive without clutch
dismantling	the bowl can be taken out of the machine in one piece spindle and bearings can be taken out of the machine in one piece
product connections	DIN 11864 aseptic screw connections with counterpiece
product temperature	52°C – 58°C
cream fat content	28% - 45%
skimming efficiency	0,05% residual fat in skim mik according to Gerber or Babcock method 0,06% residual fat in skim milk according to Roese-Gottlieb method at rated capacity / optimum process conditions for more details please see our skimming warranty document
maximum feed pressure	1,5 bar
useful discharge pressure skim	3,0 bar maximum after back pressure control
useful discharge pressure cream	2,5 bar maximum after cream flow control
dimensions	L 1.440 mm x W 840 mm x H 1.300 mm
bowl weight	265 kg
total weight	850 kg
installed motor power	15 kW
actual power demand	the actual power demand is depending on process conditions and can be further decreased by specific features and measures.
starting type	frequency converter
proplus	the proplus system enables extended ejection intervals to reduce the average discharged product quantity and to increase the protein yield.
required hoist	300 kg, hook clearance 2.000 mm
basic accessories	1 foundation frame to be integrated in the floor structure 1 set of tools for dismantling, lifting and assembling of the bowl 1 set of spare parts for approx. 2.500 operating hours

1.2. Accessories

- 1 solids collecting vessel
for collecting the discharged solids and pumping them to drain or to a recovery system
equipment adjustable feet
connection according to the separator



- 1 flow indicator and manual throttle valve
for controlling the feed flow
- 1 manual throttle valve and manometer
for controlling the required discharge pressure in the skim line
- 1 flow indicator and throttle valve
for controlling the cream flow determining the cream fat

1.3. Control system

- 1 compact control panel
dimensions (preliminary) W 800 mm x H 1.000 mm x D 300 mm
design mild steel, varnished (RAL 7035)
operator panel GEA IO 4
HMI 4" colour touch screen KTP 400
PLC CPU S7-1215C
motor starter frequency converter
pneumatic equipment solenoids and pneumatic components integrated
if required
safety feature emergency stop button



1.4. Standard components

General list of sub-suppliers which we are used in case of an order, this list does not reflect the scope of supply.

<u>Equipment</u>	<u>Brand</u>	
Pressure sensor	Hengesbach	4 – 20 mA
	or Endress + Hauser	4 – 20 mA
Flow indicator	Krohne	
Inductive flow meter	GEA	4 – 20 mA
	or Endress + Hauser	4 – 20 mA
	for skid solutions	Profinet (Siemens PLC)
		Ethernet (Allen Bradley PLC)
Mass flow meter	Endress + Hauser for skid solutions	4 – 20 mA
		Profinet (Siemens PLC)
		Ethernet (Allen Bradley PLC)
Flow switch	IFM	
Conductivity meter	Anderson-Negele	4 – 20 mA
	or Endress + Hauser	4 – 20 mA
Temperature transmitter	Endress + Hauser	4 – 20 mA
Centrifugal pumps	GEA Tuchenhagen or GEA Hilge	
Dosing pumps	sera	
Product valve	GEA Tuchenhagen or M&S or Gemü	
Control valve	GEA Tuchenhagen or Flowserve	4 – 20 mA
		4 – 20 mA
Frequency converter	Danfoss	

All components are selected in consideration of the process conditions and product safety by GEA Westfalia Separator Group GmbH. Subject to technical changes and availability from suppliers. The use of other components and suppliers on customer's request are possible but will be invoiced separately. Due to the current uncertainties in the procurement of components, GEA reserves the right to use components from alternative, equivalent suppliers.