

Liquids to Value



Westfalia Separator® **standomat**

Technical Data
Automatic standardizing unit



Automatic Standardizing Unit Westfalia Separator® **standomat**



Fields of application

Skimming separators split the incoming whole milk into skim milk and cream. If milk with a defined fat content is to be produced instead of skim milk a certain part of the cream has to be dosed back into the skim milk. This procedure is called standardizing. Besides the continuous control of the standardized milk fat content the Westfalia Separator® **standomat** units can also provide a continuous control of the cream fat content and a proportional dosing of additives.

Control system

With all models the cream fat content is determined via density measurement in a mass flow meter. The cream fat control is effected by variation of the cream flow. Control procedures adapted to the different operating conditions (start up, production, bowl discharge, shut down) take into account the specific requirements of the separator. For standardizing, a part of the cream flow is controlled via an inductive flow meter and dosed back into the skim milk. The con-

trol components for the skim milk back-pressure are integrated on the Westfalia Separator® **standomat** base unit. For all milk applications a control signal is supplied for the feed flow to the separator.

Procedure with warm milk

A high performance of the control system requires a stationary operation of the system at steady process conditions. The system is calibrated according to laboratory tests, which can be done by different analytical methods. Thus, any verification has to be carried out using the same methods. The accuracy of these different methods has to be taken into consideration while interpreting results. The maximum fat content for standardizing is 0.2 % below the incoming whole milk fat content. The deviation from the setpoint for cream fat control is +/- 0.2 %. For milk standardizing, this deviation is on-line 0.05 % right after the control unit and 0.025 % after a buffer tank.

Procedure with cold milk

Cold milk standardization in particular makes possible a fat content in the milk of 0.5 – 4.2 %, whereby the raw milk content should be at least 0.2 % above the standardized milk fat content. The standard deviation is around +/- 0.04 %.

The cream can be standardized up to maximum 40 % fat content. The control deviation here is +/- 0.4 %.

Models

Depending on the application and the control task you can choose amongst ten different Westfalia Separator® **standomat** models:

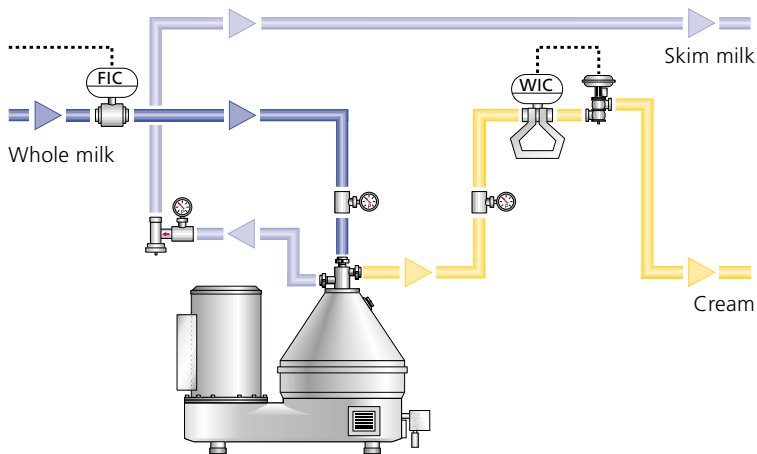
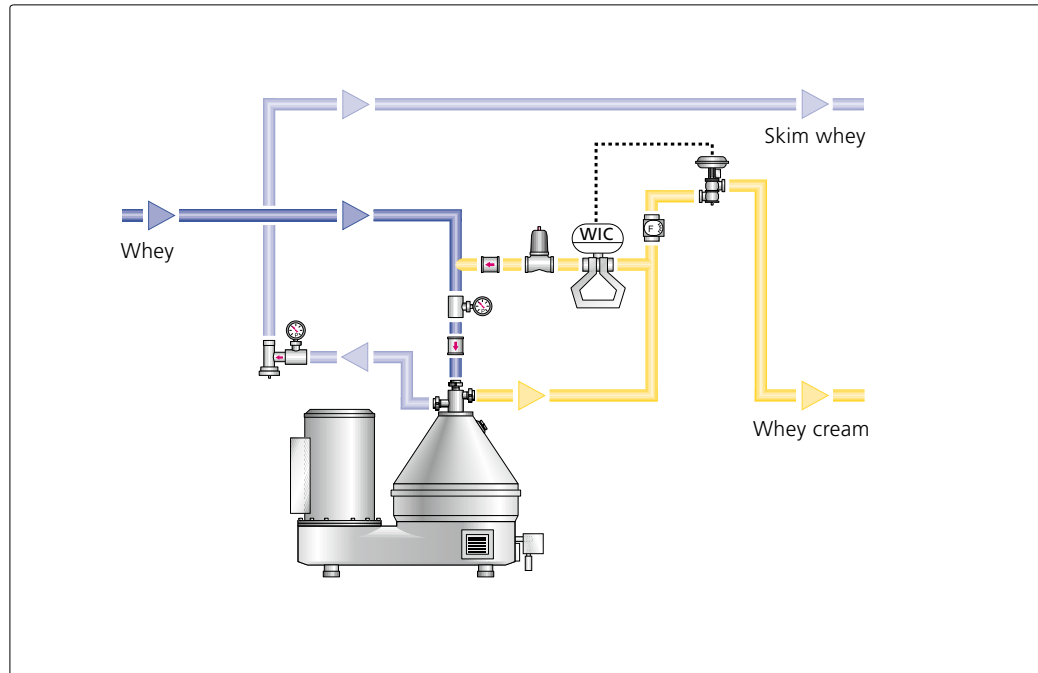
- Westfalia Separator® **standomat** WC
fat control for whey cream
- Westfalia Separator® **standomat** C
fat control for cream
- Westfalia Separator® **standomat** CB
fat control for cream + complete back blending (whole milk)
- Westfalia Separator® **standomat** MC
fat control for cream + fat control for milk
- Westfalia Separator® **standomat** MCL
fat control for cream + low fat cream < 28 % + fat control for milk
- Westfalia Separator® **standomat** MCFD
fat control for cream + fat in dry matter control for cheese milk
- Westfalia Separator® **standomat** MCA
fat control for cream + fat control for milk + additive dosing
- Westfalia Separator® **standomat** MCLA
fat content regulation cream (also < 28 %) + fat content regulation milk + additive dosing
- Westfalia Separator® **standomat** CMC
fat content regulation cream + fat content regulation milk

The above-named versions describe only some of the possibilities available. For individual applications, GEA Westfalia Separator offers solutions customized to the needs of the customer.



Westfalia Separator® **standomat WC**

This model is specially designed for the control of whey cream. The cross sections are adapted to the very small cream flow in whey skimming. A partial recirculation of the cream to the feed flow reduces the response time and enables a quick reaction on varying feed flow rates and fluctuating raw whey fat contents.

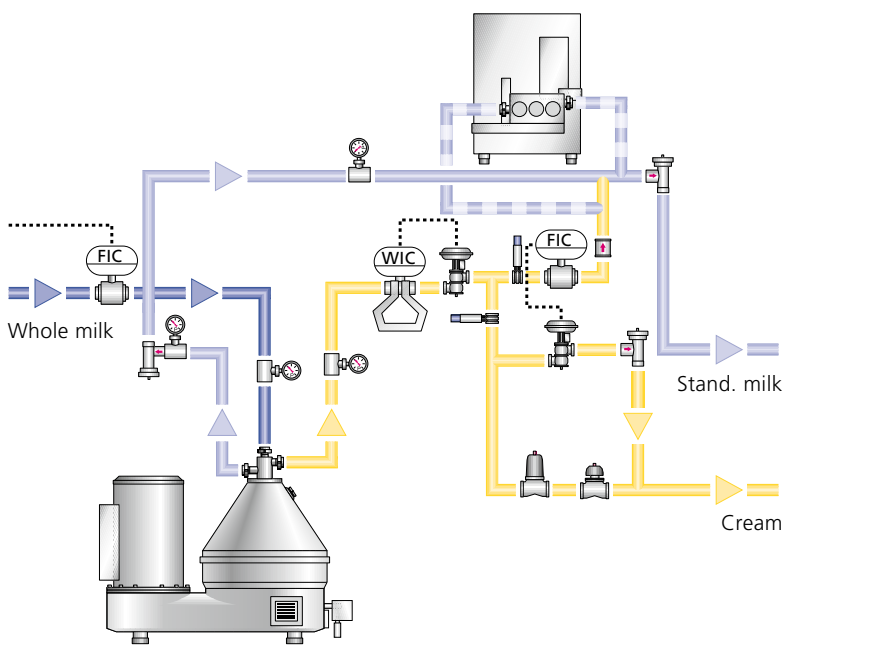
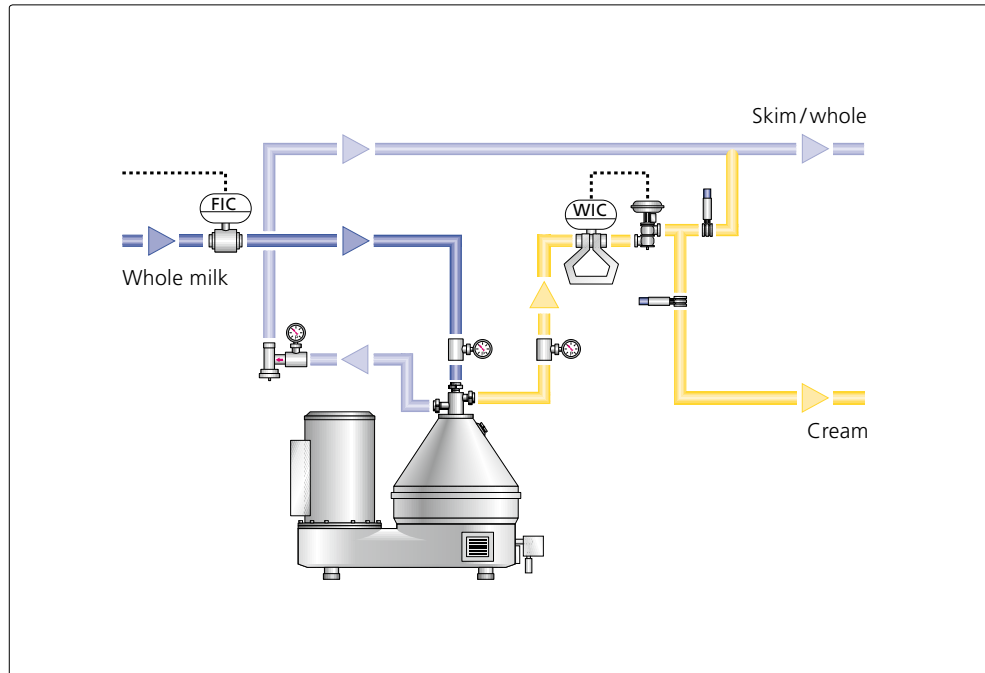


Westfalia Separator® **standomat C**

This model provides a precise control of the cream fat content at varying feed flow rates. The production is limited to cream and skim milk.

Westfalia Separator®
standomat CB

In addition to the functions of the Westfalia Separator®standomat C this model enables back blending of the cream to the skim milk. This enables the production of cream, skim milk and whole milk with the fat content of the incoming raw milk.

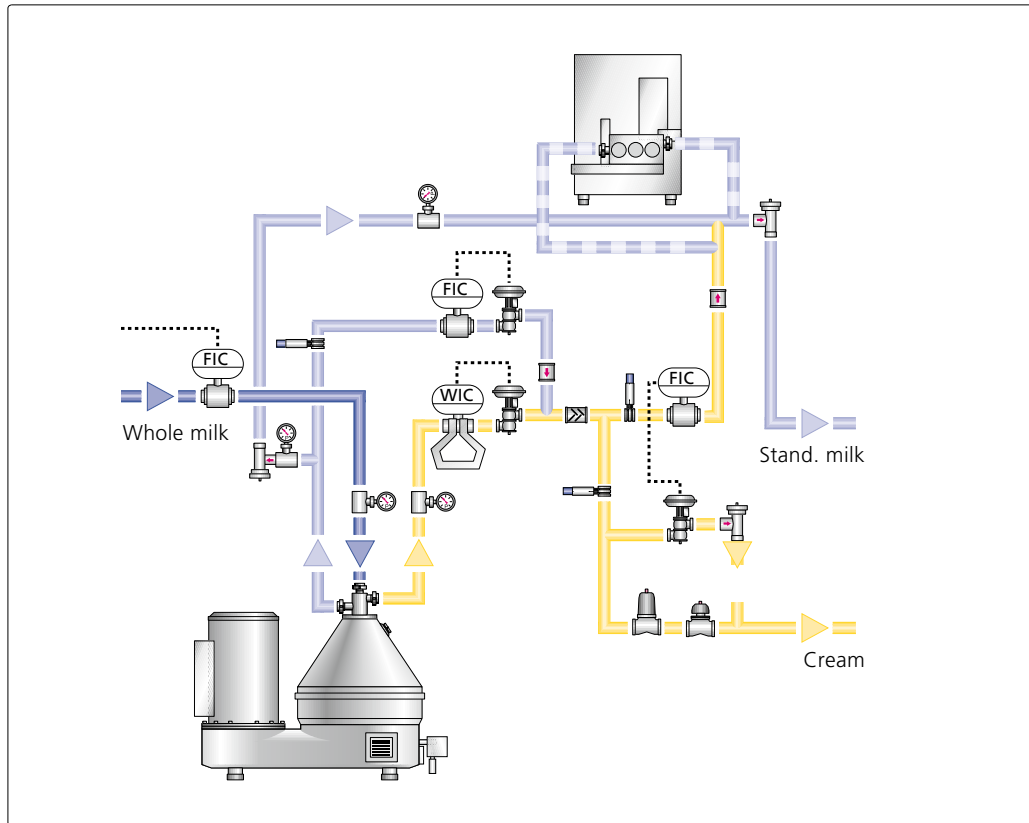


Westfalia Separator®
standomat MC

This is the most popular model designed for cream fat control and standardizing. It produces cream, skim milk, standardized milk and whole milk.

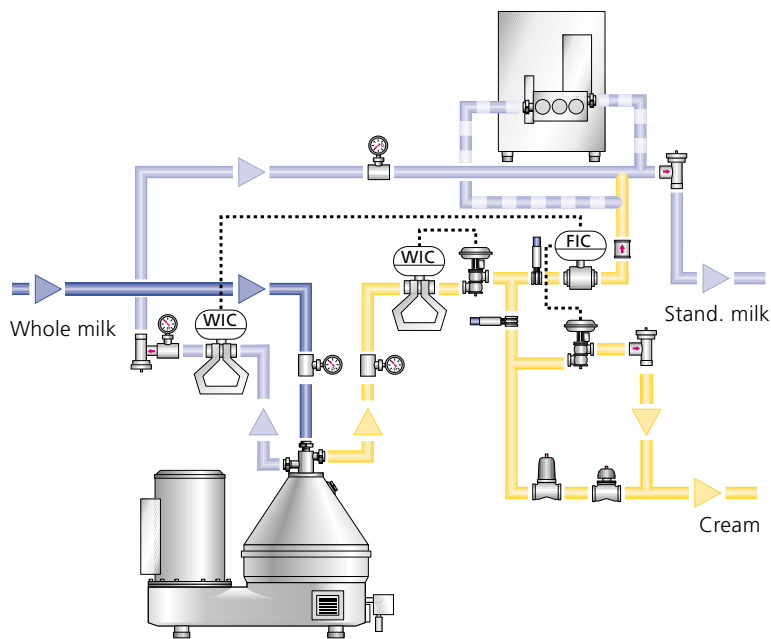
Westfalia Separator®
standomat MCL

In addition to the features of the Westfalia Separator® standomat MC this model allows the production of low fat cream < 28 %, e. g. 10 % coffee cream. This unit enables the production of cream, low fat cream, skim milk, standardized milk and whole milk.



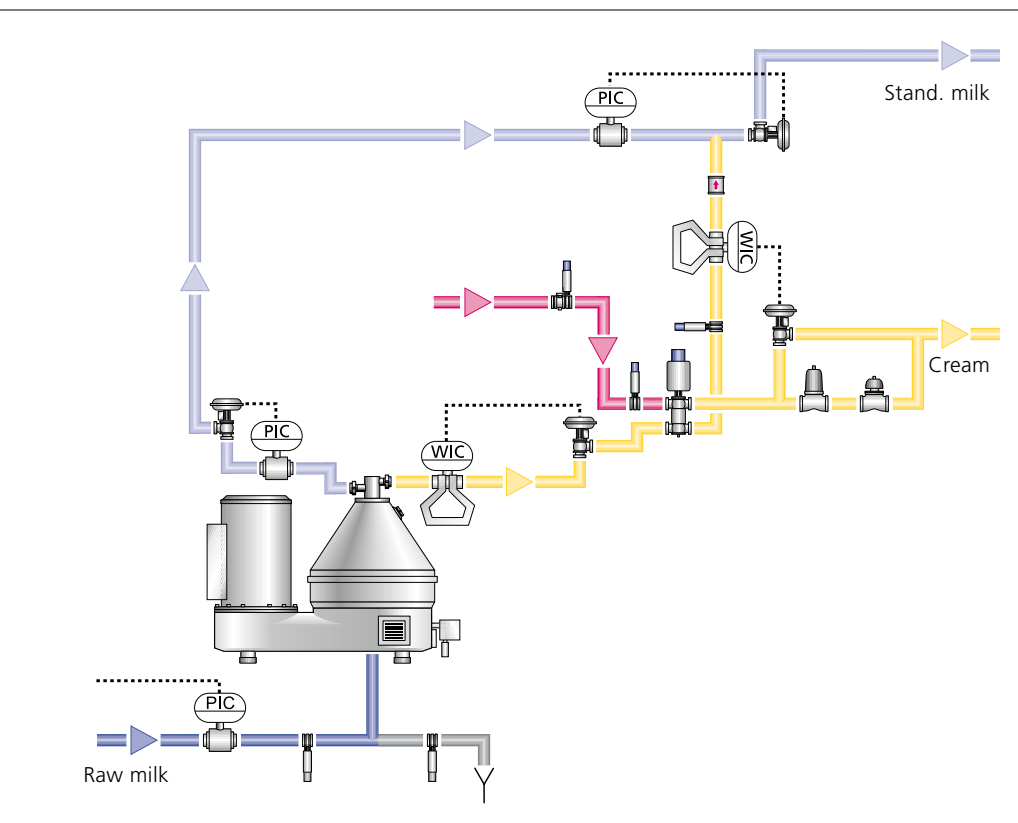
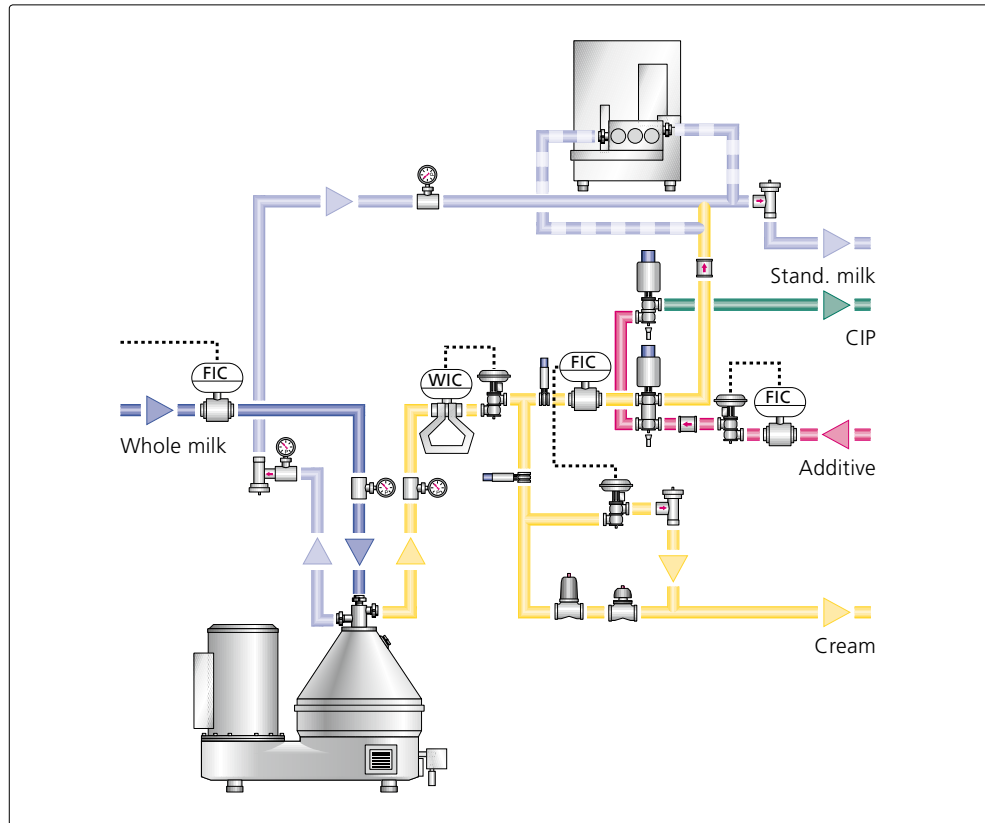
Westfalia Separator®
standomat MCFD

This unit is specially designed for the standardizing of cheese milk, condensed milk and milk powder. Besides the features of the Westfalia Separator® standomat MC the milk fat can be controlled in relation to the dry matter. It can produce cream, skim milk, standardized milk according to mass % or fat in dry matter and whole milk.



Westfalia Separator®
standomat MCA

In addition to the Westfalia Separator® standomat MC the dosing of one additional liquid component like cream, protein concentrate or vitamin solution is included. This allows the production of cream, enriched skim milk, enriched standardized milk and enriched whole milk.

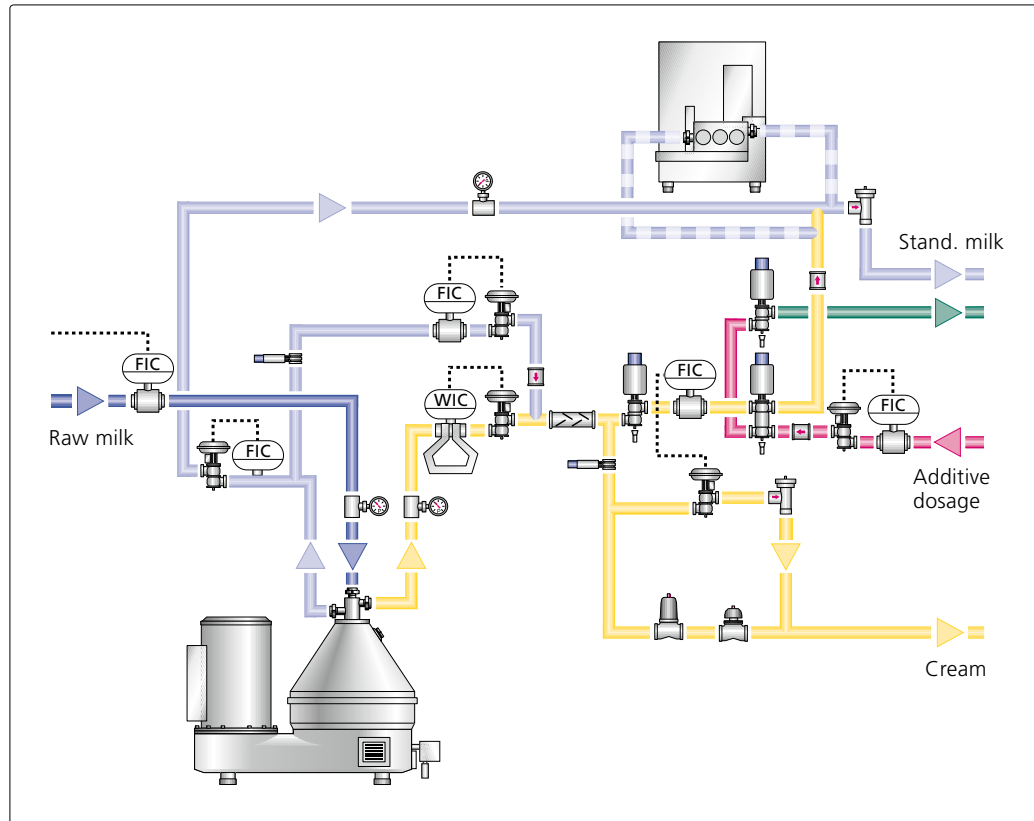


Westfalia Separator®
standomat CMC

In the cold milk process, this model additionally regulates the fat content of the milk (standardization). By this means, cream, skim milk, standardized milk and whole milk can be produced.

Westfalia Separator® **standomat** MCLA

This version is based on the MCL model. Additionally, dosing in the corresponding ratio and complete admixing of additional components can be realized.



Partial homogenizing

The models MC, MCL, MCFD and MCA can be prepared for partial homogenizing of the standardized or whole milk. With this a good homogenizing effect can be achieved with a homogenizer of $\frac{1}{3}$ of the total capacity.

Cleaning

The automatic cleaning of the Westfalia Separator® standomat is effected by the CIP of the separator. Optionally the connecting valves for a separate CIP of the surplus cream line can be integrated into the unit. The additive dosing line of the Westfalia Separator® standomat MCA is cleaned in a separate cycle in any case.



Control system

For automation and visualization of the standardizing system a SCU 8 control unit is used. It is equipped with a monochrome 6" graphic display and an alphanumeric membrane keyboard. The display shows the actual operating state with actuation status and all measured analogue values. For every control loop the current setpoint, actual value and control value are shown as well as a trend curve with the dynamic performance. Control parameters and limit values are password protected against

unauthorized modifications. Critical conditions trigger alarm messages which are also saved in a log file. All pumps, valves and control valves can be manually operated from the control unit. In conjunction with a new machine these functions can be integrated in the control unit of the separator. Otherwise the Westfalia Separator® **standomat** is equipped with a separate control unit communicating via digital I/Os or Profibus DP with the separator control.

Compact unit

The models WC and C do not require a rack, the individual components have to be mounted on site into the separator connection lines. The models CB, MC, MCL, MCFD and MCA are preassembled as a compact unit in a stainless steel rack. The control cabinet and the solenoid box are mounted on the rack. All internal electrical and pneumatic connections are installed. Each unit is tested before dispatch.

Technical Data

Westfalia Separator® **standomat**

Process data					
	Westfalia Separator® standomat				
	WC	C	CB	MC	MCL
Capacity min. max.	5000 l/h 55,000 l/h	5000 l/h 60,000 l/h	5000 l/h 60,000 l/h	5000 l/h 60,000 l/h	5000 l/h 60,000 l/h
Dimensions in mm (L x W x H)	(on-site assembly)	(on-site assembly)	ca. 1500 x 1100 x 2050	ca. 1500 x 1100 x 2050	ca. 1500 x 1100 x 2050
Cream fat content	x	x	x	x	x
Cream fat < 28%					x
Whole milk			x	x	x
Milk standardization				x	x
Standardization Fat in DS					
Additive dosing					
Fat min. Cream max.	15 % 30 %	25 % 45 %	25 % 45 %	25 % 45 %	10 % 45 %
Fat min. Stand. max.				0.5 % Whole milk - 0.2 %	0.5 % Whole milk - 0.2 %
Additive min. max.					

Process data				
	Westfalia Separator® standomat			
	MCFD	MCA	MCLA	CMC
Capacity min. max.	5000 l/h 60,000 l/h	5000 l/h 60,000 l/h	5000 l/h 60,000 l/h	20,000 l/h 50,000 l/h
Dimensions in mm (L x W x H)	ca. 1500 x 1100 x 2050	ca. 1500 x 1100 x 2050	ca. 1500 x 1100 x 2050	ca. 1500 x 1100 x 2050
Cream fat content	x	x	x	x
Cream fat < 28 %			x	
Whole milk	x	x	x	x
Milk standardization	x	x	x	x
Standardization Fat in DS	x			
Additive dosing		x	x	
Fat min. Cream max.	25 % 45 %	25 % 45 %	10 % 45 %	25 % 45 %
Fat min. Stand. max.	0.5 % Whole milk - 0.2 %	0.5 % Whole milk - 0.2 %	0.5 % Whole milk - 0.2 %	0.5 % Whole milk - 0.2 %
Additive min. max.		0.5 % 5.0 %	0.5 % 5.0 %	

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