HEATING
UP TO 100 °C

COOLING
DOWN TO 4 °C

Production of all dairy products with once device

PH PASTEURIZERS

ALLINONE

PH100 MONOBLOCK

PH200-650 WITH COOLING/HEATING UNIT

PLEVNIK
Add value to milk.

PH Pasteurizers
ALL-IN-ONE

PLEVNIK
Add value to milk.

Multifunctional device

All-in-one device combining the functions of the following devices:

Pasteurizer
Cheese kettle
Fermentation vessel
Cooling tank

Heating up to 100 °C
Cooling down to 4 °C

■ **PH**100
MONOBLOCK
PASTEURIZER

● **PH**200-650
PASTEURIZER WITH
COOLING/HEATING UNIT

RELIABLE QUALITY
MULTI USE
ENERGY EFFICIENCY
HIGH YIELD
REMOTE CONTROL

BENEFITS

1 PRODUCTION OF ALL DAIRY PRODUCTS (using one device)

Different stirrers allow the production of various end products, such as: yogurt, pasteurized milk, cheese, curd, cream, spreads, mozzarella, jam, juices, sauces, etc.
More on pages 4 and 5.

2 COMPLETE ENERGY EFFICIENCY

Energy-saving construction, sophisticated design and energy reusability provide excellent energy efficiency.
More on page 6.

3 PLUG IN AND START PROCESSING

Simple solution for a quick start to milk processing.
More on page 6.

The only requirement for heating and cooling is a power outlet.

4 AUTOMATED PROCESSING PROCEDURES

Convenient and easy management using smart controllers for controlled and repeatable processes. They make sure the working day is more efficient, organized, and documented (with the MC 500 R or MC700i recorder) More on page 7.

MC700i

MC500 and **MC**500R

Remote access option

5 EASY CONTROL AND MAINTENANCE

More on page 7.

*Versions EV, EVV and ETCVV also require a water outlet

1 PRODUCTION OF ALL DAIRY PRODUCTS

LET YOUR IMAGINATION FLY: **the PH device with a wide temperature range** and **various stirrers** enables the production of an outstanding number of different dairy products, thus expanding your product range. Furthermore, the PH device can be used to produce numerous other food products, e.g. sauces, pudding, juices, jams etc.

MILK
Pasteurized, flavoured etc.

YOGURT
Solid, liquid, Greek, Iceland etc.

FRESH CHEESE
Mozzarella, grained cheese etc.

CURD
Smooth, chunky etc.

AGED CHEESE
Semi-hard, hard etc.

RICOTTA

SPECIAL CHEESES
Soft, blue, moldy etc.

DESSERTS
Ice cream base, chocolate, creams etc.

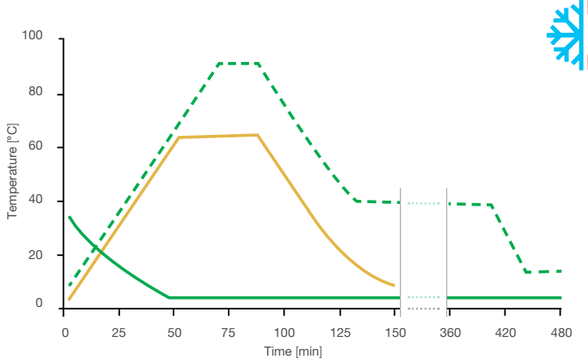
PUDDING
Flavoured, panna cotta etc.

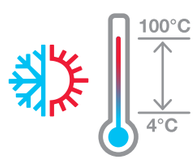
DRINKS
Milk, protein, refreshing etc.

NON-DAIRY
Marmalade, preservation, juices, beer etc.

...
And many other

WIDE TEMPERATURE RANGE





The wide temperature range of the device enables **various treatment processes** between 4 and 100 °C (pasteurization, fermentation, evaporation, maturing, cooling etc.).

SAMPLE PROCESSES

- Milk pasteurization
- Yogurt production (pasteurization, fermentation, cooling)
- Product cooling

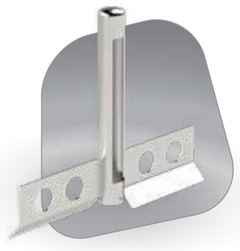
DIVERSE AND EFFICIENT STIRRING

PH100 **MONOBLOCK** — ■ standard □ option

PH200-650 — ● standard ○ option

PROPELLER STIRRER

■



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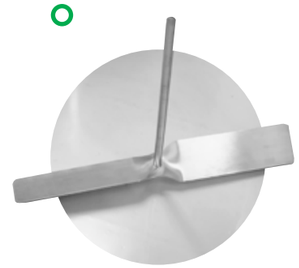


Larger 75% propeller stirrer

The larger stirrer ensures a more efficient stirring (circular rising of the content).

PROFESSIONAL STIRRER FOR YOGURT, CHEESE AND MILK

Its shape enables efficient, yet gentle stirring for a homogeneous product. The stirrer is made of stirring shovels at one or two levels.

□

○

○

Stirring rake

A detachable grid module which transforms the yogurt ferment into a liquid one (liquid yogurt).

SCRAPE STIRRERS

The sliding scrape stirrers **prevent the product from sticking to the pasteurizer walls during treatment** (gentle scraping of the pasteurizer walls) and facilitates the emptying of the container. Recommended for making pudding, rice pudding, jam, chocolate and other highly viscous products.

□

○

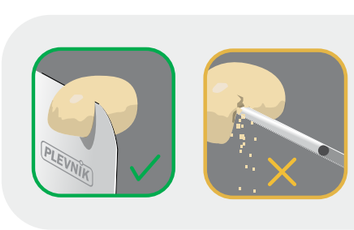
CHEESE HARPS

Manual or automated harps with sharp and thin blades ensure a precise cut which improves the quality and quantity of the final product (less cheese dust and more cheese).

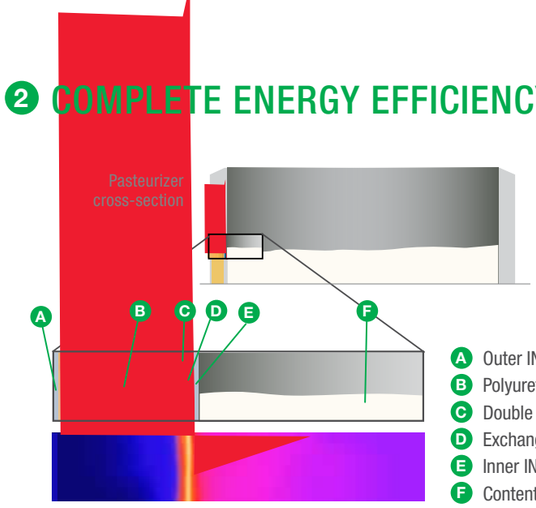
□

□○

Manual harp



2 COMPLETE ENERGY EFFICIENCY

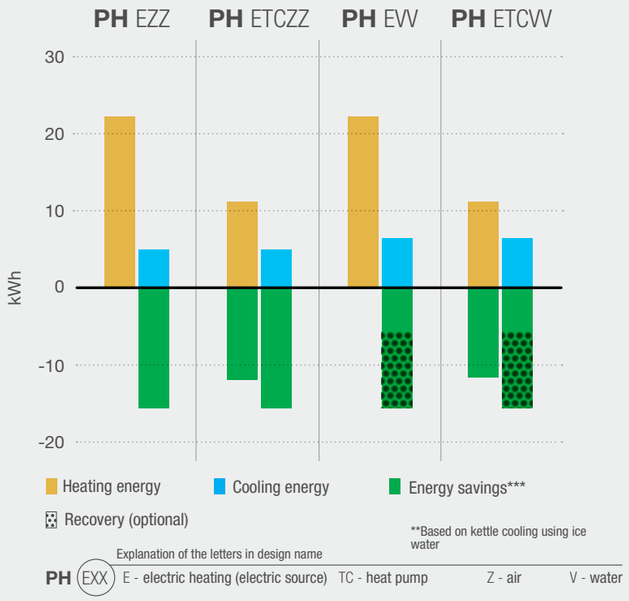


Thermographic display of temperature exchange in the kettle wall

- A Outer INOX wall
- B Polyurethane foam 0.025 W/mK
- C Double INOX coat
- D Exchange fluid (40:60 glycol)
- E Inner INOX wall
- F Content - milk

The heating and cooling energy is transferred directly across the large surface through the walls of the **coat** and the **bottom** of the pasteurizer, which enables **quick heating of the product**. Due to its **insulated triple coat (energy-saving construction)** which operates **in a closed pressure system driven by a water pump**, the pasteurizer has **10 to 30% lower energy consumption**. The small volume of the coat (between 3 and 6% of the pasteurizer's volume) which contains secondary water, the controlled water pump and the advanced controller provide **excellent thermal capacity** and **very precise process control**. Different heating and cooling options are readily available, such as heating using the **water pump**, **air-cooling, water-cooling or a combination of both down to 4 °C**.

Example of energy consumption during pasteurization of 200 l of milk up to 92 °C and cooling down to 10 °C (during yogurt production) Different versions enable different energy savings and energy/heat recovery



EZZ and ETCZZ versions using air:

Optional heating using the heat pump, with 70% reduction in energy consumption. Extremely efficient air cooling ("free cooling") down to 40 °C (COP* 35 and more). Cooling down to 4 °C with a highly efficient air-cooled cooling unit (COP* 2–3).

*COP = coefficient of performance

EVV and ETCVV versions using water:

Optional heating using the heat pump, with **70% reduction in energy consumption**. The cooling unit with water cooling can be in the same room as the machine because it doesn't warm the room. Medium cooling down to 40 °C using water via a heat exchanger, and cooling down to 4 °C using the highly efficient water-cooled cooling unit (COP* 2.5). Energy recovery is available as an option. Example: While the cooling unit operates, domestic water is heated in the water container (from 15 °C to 50 °C).

3 PLUG IN AND START PROCESSING

Install the device in the room and start producing dairy products. Excellent solution for a quick and easy start to milk processing.

Plug in and start processing...

$1m^2$ PH 100 Minimal use of space

- A Through the standard door to your dairy. **Install the PH device**.
- B Connect the PH device to the electric grid (3N).
- C **Start the program for processing milk into** various dairy end products

The EVV and ETCVV versions also require a water outlet.

4 AUTOMATED PROCESSING PROCEDURES WITH CONTROLLERS

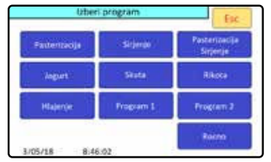
Modern and easy process control

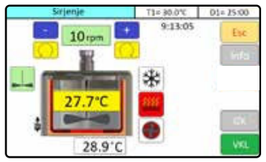
Convenient and easy control using smart controllers for controlled and repeatable processes, as well as constant properties of end products. • Save time and money **with start** and stop delay of processes. Set them in such a way that milk is thermally processed for cheese-making by next morning. • Option to record and document all active process parameters (temperature, stirring, etc.).

MC 500

A state-of-the-art controller for **process automation**. Set your unique processes and ensure **stable quality** of your products.

Outstanding flexibility and clear overview. It is possible to choose from 12 programs which can be adjusted to suit your technological procedures.

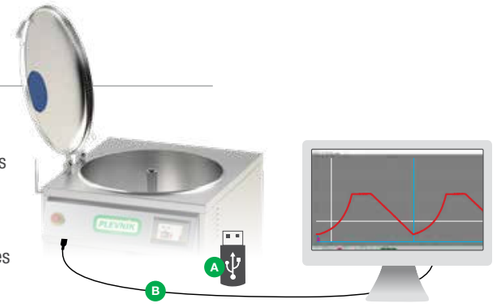




MC 500 R

The MC500R with an integrated recorder enables **digital recording** of all parameters of active processes (temperature, stirring, etc.).

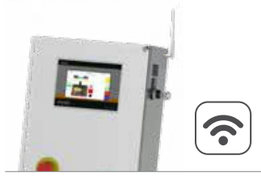
The MC500R controller has a built-in recorder which automatically records all active processes which makes it easier to control them, plus it offers an overview of completed processes. Records can be easily transferred using a USB (A flash drive or B cable) to the computer where you can view and save them.



MC700i

MC700i is a sophisticated controller which enables the highest level of process automation. Important new features: **PH sensor**, **quantity sensor**, **optional automatic dosage**, **remote access**, WiFi support, an option to integrate the MC700 into the main control centres etc.

Remote access (WiFi)* and additional program settings



Using a smart phone, desktop or laptop, you can **manage and control the processes** (turn on/off, delay, transfer records, move to the next process step, change the temperature and other specific parameters, such as speed and stirring direction).

5 EASY CONTROL AND MAINTENANCE

Control the Plevnik pasteurizer quickly and easily.
Due to the ingenious design of the devices, including the controllers and stirrers, their handling is easy, making the operation faster and more efficient. All processes (cutting, stirring, thermal treatment etc.) can simply be started by pressing a button. Cleaning is faster and easier due to the special **2R polished inner surface** which prevents sticking to the vessel walls.

*Optional equipment.

Equipment overview

PH pasteurizers – all-in-one	PH 100	PH 200-650
		
	■ included □ optional / not available	● included ○ optional / not available
HEATING UP TO	100 °C	100 °C
COOLING DOWN TO	4 °C	4 °C
VESSEL	AISI 304/316	AISI 304/316
Durable and reliable material – **stainless steel**	■	●
Energy-saving construction – **laser welded**	■	●
Faster, easier discharge – **bigger outlet**	/	○
More efficient heat exchange – **indirect cooling (plate heat exchanger)**	■	●
Lower energy consumption – **water pump**	■	●
Less cleaning, time-saving – **2R polished vessel interior**	□	○
STIRRERS		
Basic propeller stirrer	■	●
Larger 75% propeller stirrer	/	○
Professional stirrer for yogurt, cheese and milk	□	○
Professional stirrer for yogurt, cheese and milk – stirring rake	/	○
Scrape stirrer	□	○
A console for the stirrer and two-part cover	/	○
CONTROL		
Advanced automatic **temperature regulation MC500**	■	●
Advanced automatic temperature regulation using a recorder – **MC500R**	□	○
The most advanced automatic temperature regulation using a recorder – **MC700i**	/	○
Remote access – WiFi module	□	○
Stirring speed and direction regulation	■	●
Energy-saving using small batches: **Electric heater power selection module** (full or partial heating power)	□	○
In case of overvoltage (lightning strike) – **a module for operation without the controller**	□	○
OTHER EQUIPMENT		
For easier handling and discharging – **a stable support with a tilting mechanism***	/	●
For easier moving – **a support on wheels**	■	○
For easier access and ergonomic work – **a working platform**	/	○
For easier access and ergonomic work – **a elevating device**	/	○
Protection for the water system underneath the vessel ≤ 300 l	■	○
Greater durability – **a stainless steel control panel**	■	●
Stirrer motor protection – **a stainless steel cover**	■	○
Greater durability – **a stainless steel power cabinet**	/	○
Smaller dimensions for entering facilities with narrower doors – **door adaptation**	/	○
Local requirements – **a cover and valve position sensor**	□	○

*mechanical, from 500 l, the tilting mechanism is pneumatic

Working platform

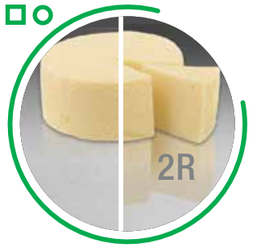
Easier access, higher discharge and easy decantation of content for further processing. Safe, efficient and ergonomic process control.

Elevating device

Enables ergonomic setting of the working height, making operation (discharging, cleaning) easier. An ideal solution for facilities with a low ceiling.

Protection around the support

Protects the kettle pipes against dirt and makes cleaning the entire kettle easier. Ensures a long lifespan due to the water system protection.



2R polished interior

Due to its very smooth surface, the contents do not stick to the walls during processing. This enables quick and easy cleaning.

A console for the stirrer and two-part cover

For accessing the vessel during processing. The vessel is closed with a two-part cover.

Protection for the stirrer motor

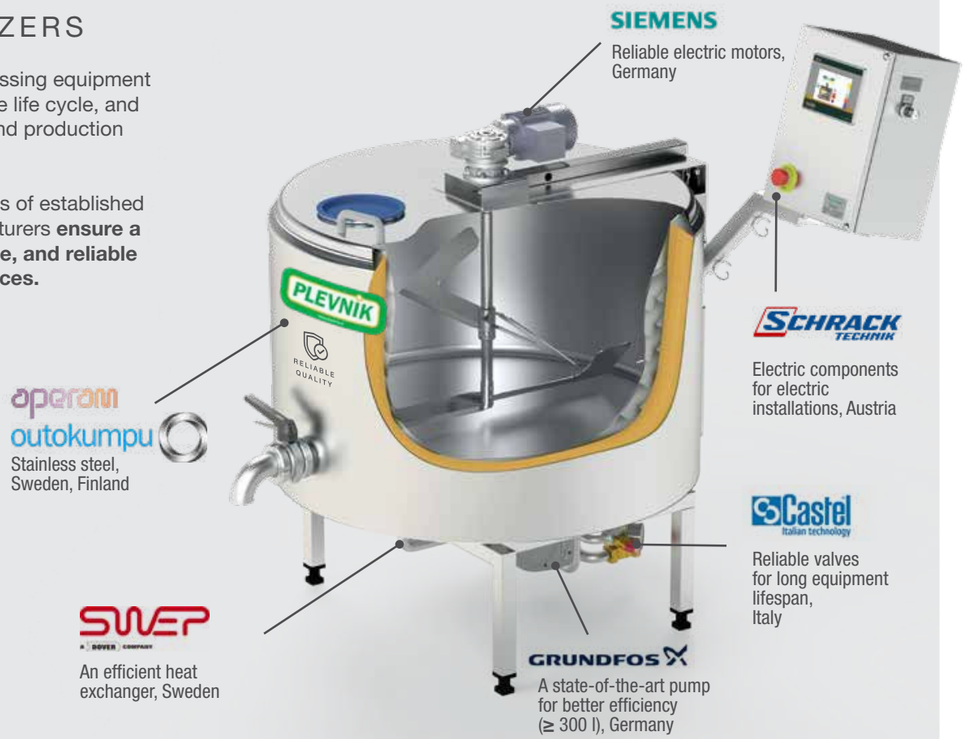
For easy cleaning

PLEVNIK PASTEURIZERS

Reliable milk processing equipment ensures long device life cycle, and prevents defects and production standstills.

Built-in components of established European manufacturers **ensure a long-lasting, stable, and reliable quality of our devices.**

made in the EU



Heating and cooling versions

				VERSIONS					
				PH 100		PH 200-650			
				EZ	EV	EZZ	EVV	ETCZZ	ETCVV
HEATING	With electric heaters (up to 100 °C)			✓	✓	✓	✓	✓	✓
	With a heat pump (up to 45 °C)		Air-cooled condenser	-	-	-	-	✓	-
			Water-cooled condenser	-	-	-	-	-	✓
COOLING	With a heat exchanger	(100 °C to 40 °C) (100 °C to 25 °C)	Air-cooled	-	-	✓	-	✓	-
			Water-cooled	-	-	-	✓	-	✓
	With a cooling unit (down to 4 °C)		Air-cooled condenser	✓	-	✓	-	✓	-
			Water-cooled condenser	-	✓	-	✓	-	✓
MC500 controller				✓	✓	✓	✓	✓	✓
Energy reusability				-	optional	-	optional	-	optional

Optional: Heating using hot water from the boiler

Explanation of the letters in design name

PH (EXX) E - electric heating (electric source) TC - heat pump Z - air V - water

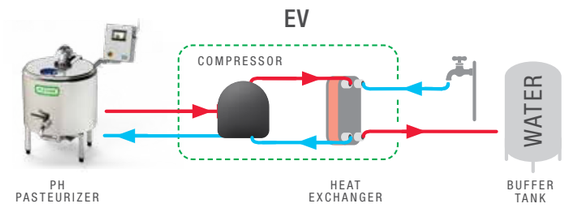
Water and energy reusability

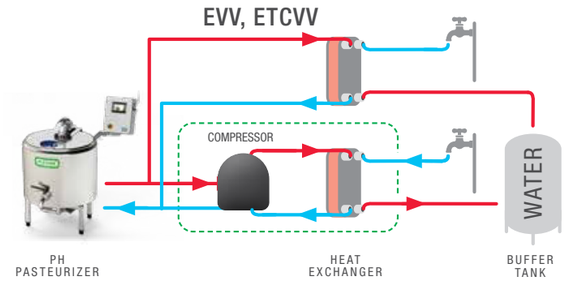
Water-cooled cooling units are smaller and do not radiate heat. A ventilated room is not required for their installation. If you are using kettles up to 500 l, you can install them in the dairy. While cooling the milk, the cooling unit is heating up the water which you can use to clean the dairy, provide water for the livestock etc. The water can be reused as tap water, whereas the recovered energy can be used for heating.

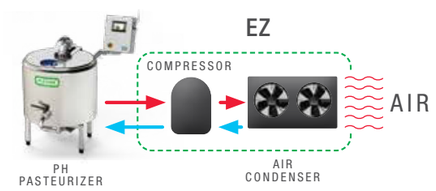
Example:
The P pasteurizer 200 EVV can heat up 200 l of water from 15 °C to 50 °C while cooling down 200 l of milk from 65 °C to 10 °C.

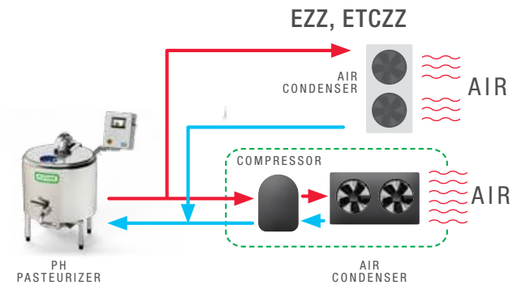
Versions with a heat pump (ETCZZ, ETCVV) – additional money saver

The PH device's cooling unit also functions as a heat pump. As such it can be used for heating up milk up to 45 °C. Using the heat pump for heating uses 70% less electricity than by using electric heaters alone. Electric heaters are used for heating milk above 45 °C. Switching between heating with the heat pump and heating with electric heaters is automatic, there is no need for user interaction.





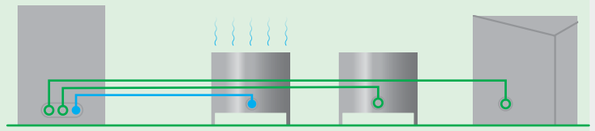




MULTIBLOCK – multiple devices connected to the cooling/heating unit for cooling processes

(Available upon request):

You can order a cooling/heating unit with **three connectors**, which enable systemic power connection of three heat consumers (pasteurizer, cheese kettle, cold store). Only one device can be active at the same time.



In use Connected and ready for use

Technical information

Type	Heater power (kW)	Cooling unit cooling power	PH 100-650 - dimensions (mm)					Cooling water connections	Hot water connections	Weight (kg)	Outlet (diameter)
			W/L	W1	H	H1	C				
PH 100	10	6.1	W=780/L=980	/	1190	1900	750	1/2"	3/4"	125	DN65
PH 200	18	/	ø820	980	1010	1380	475	1/2"	1"	170	DN50
PH 300	24	/	ø1000	1150	1010	1450	475	3/4"	1"	230	DN50
PH 500	36	/	ø1120	1270	1030	1450	330	3/4"	5/4"	310	DN65
PH 650	45	/	ø1280	1430	1010	1500	330	1"	5/4"	360	DN65

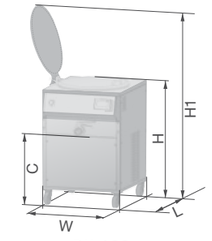
Type	Cooling unit cooling power (kW)	Heat exchanger cooling power (kW) EZZ**/ EVV***	Cooling/heating unit - dimensions (mm)					
			Versions EZZ, ETCZZ			Versions EVV, ETCVV		
			V	L	S	V	L	S
PH 200	14.2	21/29.9	1870	1500	890	1250	900	750
PH 300	17.3	21/41.3	1870	1500	890	1250	900	750
PH 500	30.1	25.5/62.5	2400	1800	980	1400	1000	800
PH 650	36.6	38.5/78.5	2200	2300	1080	1600	1100	900

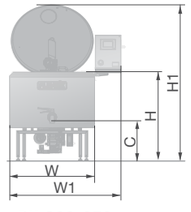
CONNECTION POWER

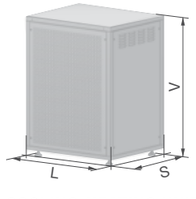
400V 3N 50Hz/EL: 4-60 kW and HW 230 V 1N 50 Hz
Device final power rating (HEATING POWER + 0.5 kW).

The parameters can be modified upon request (60 Hz etc.).

* With evaporation temperature of 0 °C and condensation temperature of 45 °C ** With the temperature difference between the cold medium and the air of dT=15 °C
*** With cold water temperature of 12 °C and flow rate between 25 and 55 l/min (based on cooling power)







PH 100 PH 200-650 COOLING-HEATING UNIT

References

"We are very satisfied with the PH pasteurizers. They are very high-quality, reliable, and they never malfunction. They are really easy to use."

Kråkarps Gårdsmejeri - Daniel and Elinor Bergvall, Sweden

"We use the PH 100 for smaller quantities and milk pasteurization. The milk is cooled down to 4 °C without any problems. This compact device has proved its value when we were starting. We had PH and very limited space. We could still make anything we wanted. From soft cheese and yogurt to semi-hard cheese."

Malina Michalscheck, James Farm, Germany

PH 18 01 2022 EN

Complete
dairy solutions

The milk processing specialists.
Together, we have created
more than 4.000 successful
cheese making stories.

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Consulting | Visit | Planning | Production | Assembly and start-up

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