



POLYFOOD®- POLYDAIRY®

Europe Patent EP0774895 – USA Patent US5916352

Complete, Autonomous & movable dairy unit for the pasteurization, cooking & dairy transformation.



Characteristics & Feasible Processes

Complete: the Polyfood contains in a single machine an overheated water generator, a generator of hot water for washing, a Dynamic Radial Heat-exchanger (the SDR¹ that is dipped in the liquid to be treated) and a variable speed agitator (0-200 rpm).

Autonomous: to work, the Polyfood just requires connection to the water supply, the power supply and fuelling with diesel oil. If water and power is not available it is possible to run the machine by means of an electric generator and an external pump (that can suck water even from a pool).

Movable: due to the small dimension and the absence of external plants it is easily transportable and replaceable.

Patents: the POLYFOOD has been patented in more than 25 nations, between which: 15 European states, USA, Canada, Australia, China, Russia, etc...

Milk Heating and Pasteurization: heats up to any temperature to a maximum of 96°C. Because it doesn't have little orifices it can treat even acid milk or partially curdled milk. It is possible to fit the machine with two half lids which avoids any external risk of contamination during the critical processes (optional).

Milk Cooling: cooling down to 30 °C is done using tap water, lower temperatures can be achieved by means of an external ice water generator with which it's possible to reach 4°C.

Curd Cooking: during the cooking it is possible to size the grain more or less by changing the speed of the turbine or providing the machine with additional agitators or cutters.

Ricotta making from whey: thanks to the high efficiency of the system it is possible to make ricotta in extremely short times, even if high temperatures are required.

Curd Cutting: thanks to the presence of a bayonet connection in the lower part of the turbine it is possible to equip the machine with a curd cutter or a cheese harp.

Versatility: it is possible to make thermal processes on liquids, semi-liquids, or liquids with solid parts in suspension, like: milk, cream, yoghurt, fruit or vegetable juices, creams, rice, pasta, etc...
Thanks to the turbine it is also possible the production of butter, vegetable soups, fruit concentrates, etc...

Hot Water: it is possible to produce large quantities of hot water (to be used for cheese stretching or washing purpose) simply dipping the SDR in a vat of water.

¹ Scambiatore Dinamico Radiale (Radial Dynamic Exchanger)

Production of hot water/steam: the machine has a connection to which it is possible to connect a washing gun to make washings and the sterilization of the working tools, of the tables, etc...

Self sterilization: starting the heating with the SDR in air, the SDR itself is sterilized at more than 100 °C.

Cleaning simplicity: because the SDR has a Teflon treatment which makes the cleaning very easy (by a hose using tap water). It is possible to make deeper washings simply dipping the SDR in a vat with an acid+basic sterilizing solution.

Easy and safe sanitation: the characteristics of the SDR guarantees a perfect sanitation because it is always possible a complete visual inspection of all the parts in contact with the milk.

High productivity: thanks to the power and efficiency of the thermal exchange it is possible to heat and cool big quantities of milk (or other liquids) in very short times. The independence from the containers allows the absence of dead times (i.e.. during the coagulation in a vat it's possible to make thermal processes on other vats).

Rationalization of productive processes: using more containers of different capacity it is possible to change both the typology and the quantities of the products easily conforming to the market requirements.

Independence from containers: because the container is not involved in the transmission of the heat, it is possible the utilization of containers of any material like: stainless steel, plastic, copper, fiberglass, or even wood.

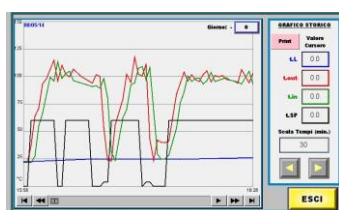
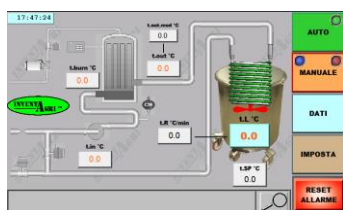
Low running costs: thanks to the efficiency of the machine and to the presence of a instantaneous heater, the thermal dispersions are reduced to the minimum allowing very low running costs. No water waste: while heating, the machine works in a closed loop configuration (with no water consumption); while cooling (which is done taking cold water from the inlet and discharging it warm, after it has subtracted heat from the milk), it is possible to recycle the discharged water to use it for the normal dairy washings.

Automation of the processes: the PLC + Touch Screen endowed with the machine allows the execution of the thermal processes both in manual mode or automatic mode (20 programs of 10 steps each).

Certification of the processes: the Touch Screen endowed with the machine allows the record of all the thermal processes done. The recorded data can be displayed on the Touch Screen in graphic form or table form and eventually saved on a USB storage key for further elaborations on a PC.

Respect of norms: the machine stands to all the European norms regarding machinery norms (CE) and the UE norms concerning materials in contact with alimentary substances.

Respect of traditions: the machine allows the transformation of the milk in dairy products in full observance of traditions and preserving the original characteristics of the products.



Phase	Type Phase	Set Point LSP (°C)	Temp. T (°C)	Material	Flow Rate (L/h)	Flow Rate (m³/h)	Flow Rate (m³/d)	Flow Rate (m³/y)	Flow Rate (m³/mo)	Flow Rate (m³/d)	Flow Rate (m³/y)	Flow Rate (m³/mo)	Flow Rate (m³/d)	Flow Rate (m³/y)	Flow Rate (m³/mo)	Flow Rate (m³/d)	Flow Rate (m³/y)
01	HEAT	72	0	0	1	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02	COOL	40	0	0	1	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03	REFG	40	0	0	1	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04	HEAT	72	0	0	1	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05	END	72	0	0	1	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06	END	72	0	0	1	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07	END	72	0	0	1	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08	END	72	0	0	1	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09	END	72	0	0	1	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	END	72	0	0	1	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Technical data:

Models	Useful Thermal power (KW)	Electric power* (KW)	Diesel oil consumption max (Kg/h)	Minimum workable capacity (L)	Hourly Production Capacity** (L/h)	8 Hours Production Capacity** (L)	Max. Dimension (mm)
POLY-S/20E	20	21	-	45	135	1080	1600x750xh1700
POLY-S/27E	27	28	-	45	185	1480	1600x750xh1700
POLY-M/40E	40	41	-	80	270	2160	2100x750xh2350
POLY-L/54E	54	55	-	120	370	2960	2100x750xh2350
POLY-S/30D	30	1,2	3.2	45	210	1660	1600x750xh1700
POLY-M/48D	48	1,4	5.7	80	325	2610	2100x750xh2350
POLY-L/55D	55	1,4	6.7	120	380	3050	2100x750xh2350

(*) 230V/1/50 Hz or 400V/3/50Hz - (60 Hz version available on request)

(**) Approx. values for a 10 °C / 72 °C / 40 °C pasteurization cycle