



Limitech



Dairy

SOMETHING CHEESEY

ANALOGUE CHEESE

CHEESE SAUCE

BLOCK CHEESE

FETA CHEESE

PIZZA TOPPINGS



OFFER FOR THE CHEESE INDUSTRY

Limitech A/S has for decades manufactured machines and process solutions for the cheese industry, both as stand-alone machines and full process lines.

Based on Limitech's experience and large know-how, production lines has been developed and specialized to the process of various cheese products. This folder will go through the different segments of the cheese industry, in which Limitech operates, and will consist of the different applications Limitech supplies to the industry.



PROCESSED CHEESE

Cheese has a long history, going back to the discovery of processed cheese - that when melted the addition of phosphate and citrates would affect the texture when cooled down. This process would then not only prolong shelf-life but also make it possible to create new products with unique properties like texture, shape, and taste.

This means, that processed cheese is a blend with cheese as main ingredient combined with water and additional ingredients such as milk powder, milk or vegetable fat, whey proteins, etc. Properties of the cheese like viscosity, texture, pH, and water binding is achieved using emulsifiers, stabilizers, melting salts, etc.

When processed, the grained/ rased cheese is added into the cooker along with the other ingredients. Here, it is heated and mixed until uniform before it is finally pumped into a buffer tank for cooling before entering the filling station. The cheese can also be sterilized on a UHT system before cooling and filling, which will ensure an even better shelf-life.

Limitech offers production capacity for processed cheese in the range of 40-1200 L/h depending on the size of the mixer.



ANALOGUE/RECOMBINED CHEESE

Analogue or recombined cheese is made like processed cheese but not necessarily by using dairy based ingredients, ingredients such as vegetable fat, starches and other protein sources than milk can be used.

Analogue cheese is a product used as a culinary replacement for cheese. It has all the typical properties and meets all expectations of traditional cheese but is designed to have special properties such as different melting points or lower costs that make them attractive to businesses. A typical example of analogue cheese is “pizza topping” and in this segment ‘vegan cheese’ has in the last few years become extra popular with ever increasing demands. However, analogue, or recombined cheese is not to be labelled as “cheese” due to jurisdictions.

As with processed cheese, the texture is developed using especially emulsifiers, stabilizers, starch, and different fat types. All ingredients are added into the cooker where it is mixed and heated until uniform. When finally mixed, it is pumped to a buffer for cooling before filling of the product. UHT is also a possibility with analogue/ vegan cheese products which will be described more thoroughly later.

Limitech production capacity: 40 - 1200 l/h depends on the size of the mixer.

CREAM CHEESE

Cream cheese is a soft and mild-tasting cheese with a high fat content. Traditionally, it is made from unskimmed milk enriched with cream and stabilizers. Cream cheese has a higher fat content than other cheeses, as fat repels water which usually tend to separate from the cheeses, however, by adding stabilizers you can bind the water. Minimizing the water separation also tend to prolong shelf life.

Limitech production capacity: 40-1200 l/h depending on the size of the mixer.

THE PROCESS AND LIMITECH EQUIPMENT

Limitech manufacturers equipment for all stages of processes. This will ensure that the equipment is correctly designed and standardized to fit your production.



LIMITECH'S MACHINE FOR CHEESE

The LiMiX 2 is one of the most versatile and efficient food mixers you will find on today's market. It is a multifunctional mixer with maximum flexibility and it is perfect to produce processed cheese, analogue/ recombined cheese, and cream cheese. The machine is made with the highest attention to hygienic design and cleanability to ensure food safety. The cooker is designed to heat by direct steam as it is a quick and gentle way of heating the product. Perfect to avoid changes in flavour - but it can also be fitted with indirect steam if preferred. The vacuum pump is added to suck out evaporation and thereby minimize the condensate water dripping back into the product.

Some of the advantages with the mixer is the fully open lid, the multifunctionality and the changeable mixing tools.



THE MIXING UNIT IN LIMIX 2

The mixing unit in LiMiX 2 is mounted in the bottom of the tank in an angle maximizing the mixing effect and allowing the final product to be pumped out from the lowest point of the vessel. The mixer operates like a centrifugal pump and pre-homogenizes the product to make almost instant emulsions and blends.

After mixing of the cheese is completed the high shear mixer can be turned off. This allows the inclusion of particles like herbs and spices to be added to the cheese. This ensures that the texture of these inclusions is not destroyed by the mixing unit, as the production tank can be emptied independent from the mixer unit.

All mixer units can be fitted with different mixing tools that can be reconfigured after delivery. This ensures a multifunctional solution that will serve you for years without running short of options. The range covers functions from fine emulsions with oil droplets down to 1 micron to gentle cooking processes with particles - all in the same vessel. All options are suited for very viscous products.



THE AGITATOR

The agitator system is designed to gently blend without destroying particles and efficiently scrape the inside tank wall to ensure maximum heating and cooling transfer into the product. The agitator is equipped with a frequency converter for variable speed control of the motor. The agitator is available in different designs all optimized to the process and product produced.

Benefits:

- High production quality with a rapid heating process leading to a higher production capacity.
- Avoids burning or freezing on tank wall.
- Save money by avoiding further investments as the machine is multifunctional.



VACUUM

The vacuum system has three functions: one for de-aerating the product, one for foaming during the process and one for drawing dry or fluent ingredients into the tank under liquid level. This process makes it a clean, fast, and efficient way to add ingredients

Benefits:

- Higher capacity and profitability on the adjoining machines.
- Increase product durability.
- Higher production profitability.
- Better product quality.
- High capacity.

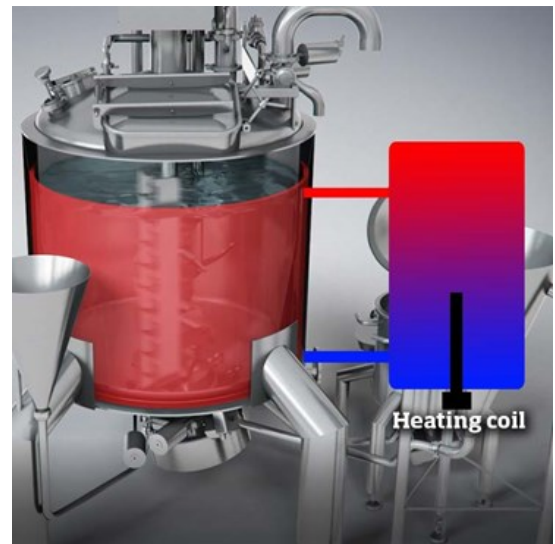


INDIRECT HEATING

Steam is blown into the dimple jacket to heat the product to avoid direct contact with the product. This gives a gentle heating process that is easy to control while also avoiding added condensate from the steam in the product.

Benefits:

- Inexpensive heating with steam.
- Easy to control recipes



DIRECT HEATING

Steam is injected into the vessel. It ensures a very rapid heating with no risk of protein burning on wall surfaces and thereby ensures a gentler heating of the product. This heating process is typically more than twice as fast as indirect heating.

Benefits:

- More product per hour.
- Better product without aftertaste.
- Avoid waste.



COOLING

The cooling system in the mixer is run by cold or ice water in the dimple jacket. This system reduces cooling time rapidly and can with Limitech's vacuum system be reduced even further. Please ask for more specific information regarding your product.

Benefits:

- Fewer machines needed as you can heat and cool in the same machine.
- Inexpensive method compared to a surface scrape heat exchanger.



PLC CONTROL

Full PLC system with recipe control to ensure the same product quality in each batch and to minimize the risk of operator faults.

Benefits:

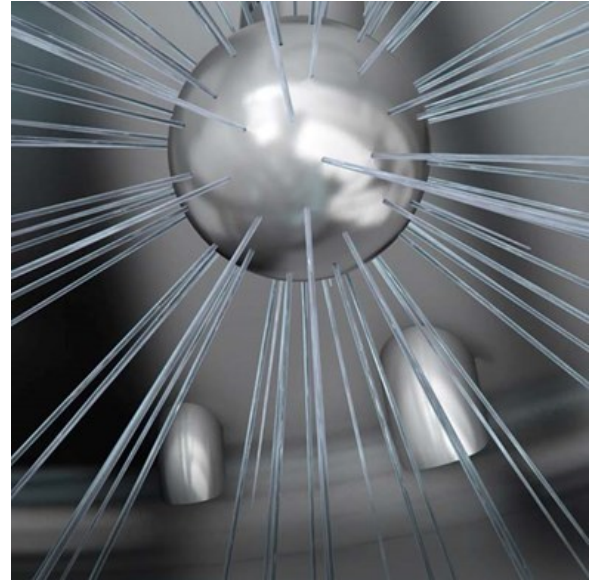
- Consistent quality
- High capacity

CIP

2 or more spray-balls are mounted inside the tank for automatic cleaning. This ensures an easy cleaning without interference from the operator. Limitech supplies CIP units in two different sizes to fulfil every flexible need in the production. Here, Limitech has added Flipside to the CIP machinery ensuring complete automation of cleaning in all parts of the machinery.

Benefits:

- Saves times which leads to a higher product capacity per day.



CONICAL BUFFER TANK

The conical shape and effective self-adjusting scraper on the stirring device assure that even highly viscous products are transported to the outlet with minimal waste. Furthermore, the conical tank design offers a large surface resulting in fast deaeration of the product.

Benefits:

- Can be used as both buffer tank and process tank.
- Can be used in both continuous and batch production.
- Delivered with purpose adapted stirring device.
- Can be used as a cooling or heating tank.
- Hygienic and functional design.
- Assures optimal stirring, mixing, and blending of ingredients.
- Easy and quick to empty.
- Efficient agitation and scraping



Tank sizes in liters: 50, 150, 250, 500, 1000, 1500, 2000,

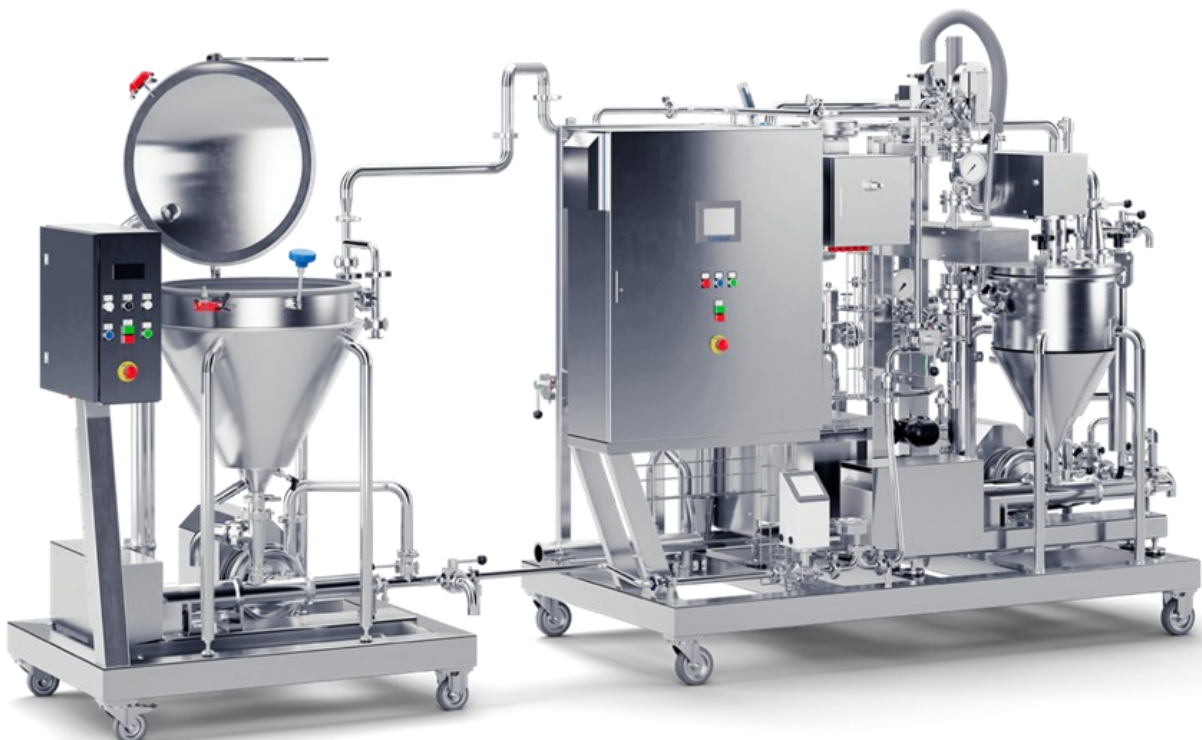
ULTRA HIGH TEMPERATURE TREATMENT

Benefits:

- Quick effective heating and cooling.
- Preserve flavour.
- Kills bacteria, virus, yeasts, moulds and bacteria phages.
- Longer shelf life.

The UHT unit

- Double injector makes continuous production possible.
- A wide variety of application possibilities .
- The plant can be adjusted for an existing operation if required.
- Easy to operate.
- Prepared for easy and hygienic cleaning.



CHEESE/BUFFER RASPER

The cheese/butter rasper is designed to rasp cheese and butter blocks.

Benefits:

- Quick rasping to avoid rake surface getting hot.
- Rasped pieces in even sizes.
- Can grind all kind of cheese textures from hard to semi-soft cheese and frozen butter blocks up to 18 kg can be processed.





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SHOULD YOU BE INTO SOMETHING CHEESEY?

Then contact Limitech for much more information!

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