

Energy saving solutions

A pre-cooler lowers the temperature of the milk before it enters the tank. This is done by making a cold (tap- or spring-) water flow against the flow of the hot milk.

This can half the energy need of the cooling process. Normally, any heat generated during the cooling process goes to waste in the outside air. However, with the Mueller Fre-Heater®, such heat is used to heat water free of charge.

Milk pre-cooling

Seen from both an economical and environmental point of view, the most advantageous way to reduce energy consumption in the milk cooling process is to install an effective pre-cooling unit. Pre-cooled milk means a lower and more stable temperature in the cooling tank, ensuring the best conditions for ideal milk quality.

The milk needs to be quickly brought down to a temperature of 4 °C to slow down micro-organism growth. Apart from excellent properties for maximized heat transmission, Lely Pre-cooler's joint-free tubular construction also allows easy cleaning and minimum maintenance, a prerequisite for preserving milk quality. Lely Pre-cooler is also efficient when it comes to space, just mount the unit in an elevated position on the wall to optimize milk room layout.



Energy saving solutions

Potential energy savings pre-cooler

The Energy required to cool down the milk is normally around 15 kWh for 1.000 liter milk. The starting temperature in the cool tank is 37°C and it is cooled back to 4°C, In this situation the milk temperature will decrease by 33°C. By installing a pre-cooler, the starting temperature will decrease to 22°C this will result in an energy savings of 50%. The efficiency of the pre-cooler depends on the water temperature entrance and water flow through the pre-cooler.

When the goal is to save 50% energy, the entrance of the water temperature needs to be 15°C or lower and the water flow needs to be at least 67l/min, This will result in a milk exit of 19°C.

Reusing warmth for optimal drinking water temperature

The Lely Pre-cooler is a highly efficient and energysaving pre-cooling process. The water-based system is designed to cool the milk rapidly while making the best use of the lukewarm water. By letting milk and water flow in opposite directions, the cooling efficiency can generate up to 2 litres of lukewarm water for every litre of cooled milk (depending on water flow). The user can make an energy-saving of 50% when cooling the milk in

the tank.

The lukewarm water generated in the pre-cooling process can also be used for supplying cattle with ideally tempered drinking water, especially in the winter time. Served drinking water at a temperature of 15 °C, the cattle tend to increase their water intake which in turn can result in milk production increase. The Lely Pre-cooler can be easily connected to the current drinking water system.

Technical data

Housing

Cylindrical container in stainless steel.

Height: 560mm

Diameter: 475mm

Depth: 500mm

Weight (empty container)

42 kg

Milk connection

Slip-on connection for milk hose or weld-on connection.

Water connection

R3/4