

Tomatoes are used in huge numbers of food products.

This also means that there are many different types of processing involved, and that stringent hygiene standards are required.

Alfa Laval Foodec decanter centrifuges are one of the few types of equipment with the versatility and hygiene focus to make this possible.



#### Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineered solutions. Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

#### How to contact Alfa Laval

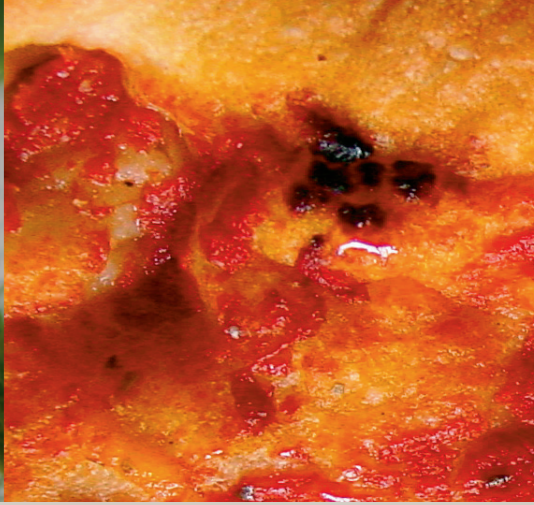
Up-to-date Alfa Laval contact details for all countries are always available on our website at [www.alfalaval.com](http://www.alfalaval.com)

## Total tomato

### Alfa Laval Foodec decanter centrifuges for tomato processing



# Pressing the flesh



Industrial processing of tomatoes into pastes, peeled tomatoes in cans, pulps, etc. began in Italy, Portugal, Spain and the USA around 1900. A worldwide tomato processing industry has since evolved.

During the last thirty years in particular, many new varieties of tomatoes have been developed, mostly with a view to mechanical harvesting, which requires a very stiff fruit structure.

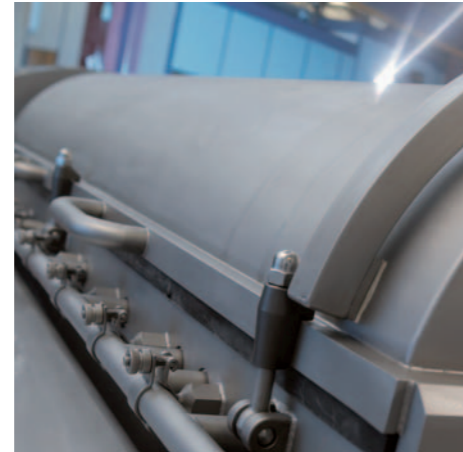
In order to achieve maximum efficiency and profitability in dealing with these, manufacturers of tomato products need processing equipment that is versatile enough to handle a wide range of different types of products. It is also important that it is modular in construction, to make it easier to deal with constant changes in market requirements.

Hygiene issues are also increasingly important, and the quality and dryness of the processed tomato paste are crucial parameters in ensuring commercial success.

### The process

A wide range of products can be obtained from tomatoes, including tomato juice, paste, diced/peeled tomatoes, strained tomato pulp, sauces and powder. For the industrial market, tomato paste is probably the most important product because it is used as the basis for a wide range of other products.

In general, the fruit is washed, sorted and pre-conditioned by crushing, peeling or cutting it to the required size. Depending on the particular requirements, the pre-conditioned fruit then undergoes heating, refining, pulping, reconditioning, evaporation, pasteurization and packing.



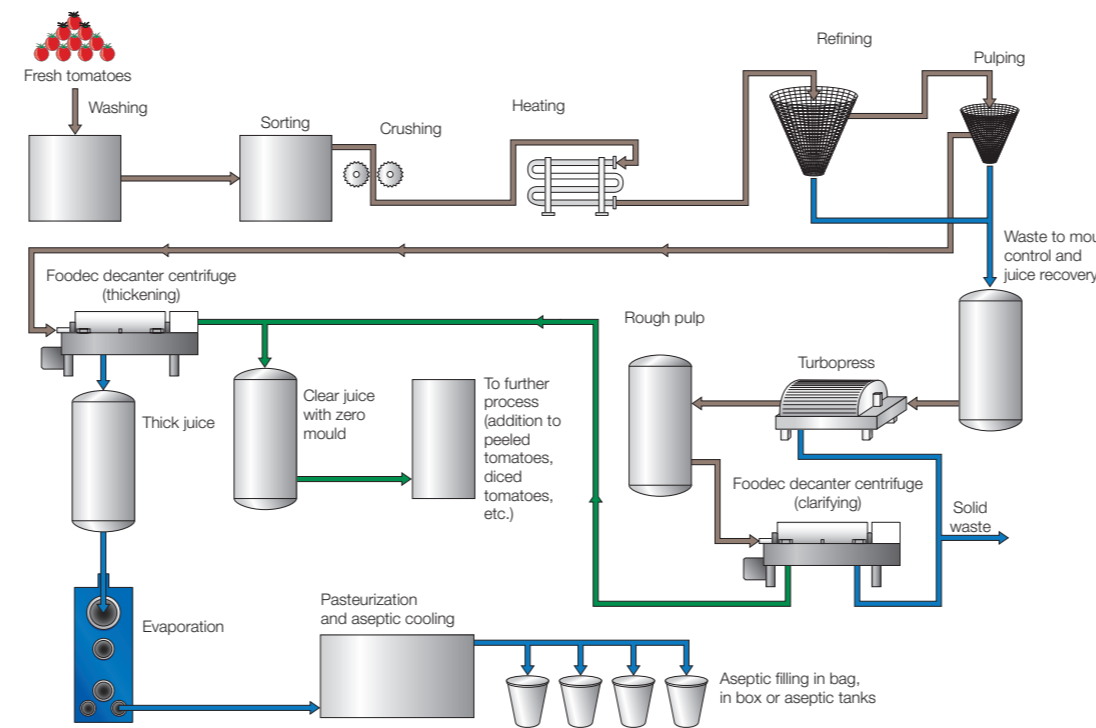
Separation is a key part of the reconditioning stage of this process. By removing any moulds present, separating out the pulp and clarifying the juice, the manufacturer can control the colour, mould content and viscosity of the final product.

These are the key parameters that determine quality, and thus have an influence on value further down the value chain.

### The Foodec benefits for tomato processing include

- up to 25% greater capacity, at no extra cost
- unparalleled hygiene standards, which mean better product value
- lower power consumption, which means lower operating costs
- significantly better control over pulp viscosity.

### High-efficiency process flow chart – tomatoes



### Alfa Laval in tomato processing

Tomato processing is seasonal, with a limited period of only 60–100 days per year. There are a very large number of different varieties of tomatoes, and the quality also depends heavily on climatic conditions and weather.

For all manufacturers, the main requirement is therefore to have an efficient, reliable and versatile processing plant that is in continuous operation. Manufacturers are constantly on the lookout for any possible means to improve both quality and yield.

Separation plays a major role in their ability to do this, and Alfa Laval Foodec decanter centrifuges are the ideal solution for this task.

### Mould control

In tomato juice production, the amount of mould present in the juice directly affects its quality.

The pre-conditioned fruit is passed through a refiner/pulper. The wet cake from there can also be re-processed via a turbopress and a decanter centrifuge in order to recover the remaining juice.

To achieve better yield, the refiner and pulper are often used to produce a dry cake and high juice yield. This, however, has the drawback of a high level of mould residue in the juice.

By adjusting the refiner and pulper to produce a wet cake instead, and then using a turbopress and Foodec decanter centrifuge for subsequent processing, a manufacturer can reduce mould content with very little loss of juice. Alfa Laval Foodec decanter centrifuges make it possible to remove all moulds from the juice.



Clear juice can then be mixed with other product in order to reduce the mould content. This kind of efficient mould control makes it possible for manufacturers to improve the quality, colour and value of their products.

### Viscosity control

Viscosity is a very important factor in the production of tomato paste, as it has a direct effect on the final product.

The tomato juice from the refiner normally contains 38–45% pulp. The aim is to produce a paste with the greatest possible level of pulp that can still be pumped effectively to the evaporator, because this reduces evaporation costs.

The clear juice from the decanter centrifuge can be used to adjust the colour and viscosity of the paste until it has the required characteristics. However, it can also be used in other related production processes, such as diced and peeled tomatoes. This makes sure that nothing goes to waste, and also enables companies to diversify their product line.



Each individual batch of tomatoes has its own unique characteristics. When processing a large batch, the high degree of controllability available with the Alfa Laval Decanter Core Controller (DCC) and Direct Drive (DD) gearbox enables the producer to run tests and make adjustments rapidly and effectively, with no time wasted in changing machine settings mechanically.

### Strained tomato pulp (passata)

This process is similar to that used for tomato paste. The critical factor, however, is viscosity. The pulp must have the correct viscosity in order to prevent the serum from separating when the final product is poured.

Here, too, Alfa Laval Foodec decanter centrifuges are ideal because of the rapid response and effective viscosity control that they make possible.

### Benefit from Foodec decanter centrifuges in your tomato processing

Foodec decanter centrifuges feature a series of built-in advantages including

- better solids transportation that enables you to boost solids handling capacity by up to 25% compared with all other designs currently available – at no additional cost
- special sanitary design that enables you to match stringent FDA, 3A and USDA standards. The Foodec design also focuses on ease of cleaning
- an advanced drive system that enables you to operate at any given capacity with significantly lower power consumption than other current designs
- a new control system – the Alfa Laval Decanter Core Controller (DCC) – that reduces your operating costs and gives you even better control over the separation process. This makes it possible to reduce production costs as well as boosting the quality and value of the end product.

