

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



A clear advantage in beverage processing

The Clara disc stack separator range



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The Clara range:
gentle treatment, efficiency,
low power

The Clara range of high-speed
separators is specially developed for
the food and beverage industries.
In developing the Clara range, we
emphasized gentle product treatment,
high separation efficiency and low
power consumption.



Each model has its advantages

Within the Clara range there are models of all sizes – from laboratory or pilot scale operation to models for large food or beverage plants with huge capacities. Depending on model the Clara separators are available in different designs, from non-hermetic ('top fed'), to fully hermetic design.

The Clara separators have several distinct advantages, depending on the model.

Disc inlet

The disc inlet enables the feed to accelerate in a very gentle way. This increases separation efficiency and minimizes foaming.

Oxy-Stop

The liquid seal in the separator outlet prevents oxidation of the product and loss of volatile aromas or CO₂.

Fully hermetic design

The fully hermetic design is achieved by a combination of a hollow spindle inlet, a hermetic outlet provided by a mechanical seal, and a separator bowl completely filled with liquid.

In addition to maximum separation efficiency and significantly reduced power consumption, the fully hermetic concept prevents any air-liquid interface, which otherwise is a source of foaming and food degradation.

Hollow spindle design

Our unique hollow spindle design ensures the gentlest acceleration of shear-sensitive particles. This leads to maximum separation efficiency and reduced power consumption at the same time.

Alfa Laval components and systems for beverage processing

- High-speed separators
- Decanter centrifuges
- Heat exchangers, including evaporators pasteurizers, sterilizers, etc.
- Membrane filtration systems
- Aroma recovery units
- Pumps, valves, tubes & fittings, and other fluid handling components
- Tank cleaning components
- Control and automation systems



Clara 200 separator system



Clara 701 separator

Selection guide for the different designs available in the Clara separator range.

Model	Inlet type	Outlet seal	Fully hermetic	Skid
Clara 20	Disc inlet	No	No	Yes
Clara 80	Wing inlet	Mechanical seal	No	Yes
Clara 200	Disc inlet	Mechanical seal/Oxy-Stop	No	Yes
Clara 250	Hollow spindle	Mechanical seal	Yes	Yes
Clara 401	Hollow spindle	Mechanical seal/Oxy-Stop	Yes	No
Clara 501	Hollow spindle	Mechanical seal/Oxy-Stop	Yes	No
Clara 601	Hollow spindle	Mechanical seal/Oxy-Stop	Yes	No
Clara 701	Hollow spindle	Mechanical seal/Oxy-Stop	Yes	No



Citrus

Auxiliary systems for small and large models

The smaller models Clara 20, Clara 80, Clara 200 and Clara 250 are all skid mounted to facilitate installation, minimize foot print and make them mobile (all the skids have wheels). On the skid are all the equipment needed for efficient and reliable operation of the separator. There is a control panel and a pipe rack containing all the necessary components to feed the separator with product and service water.

The larger models are less suitable for skid mounting. Here, the electrical panels for starter and control panel are mounted on a stainless steel, self-supported, frame. Product and service water piping with all valves and gauges are mounted on the opposite side of the same frame.

Feed pumps and pumps for solids discharge are available as option for all Clara models. The larger Clara models also have turbidity meter and capacity control as option.

Besides the Clara range Alfa Laval also has other separators for beverage processing such as the CR-models for citrus oil.

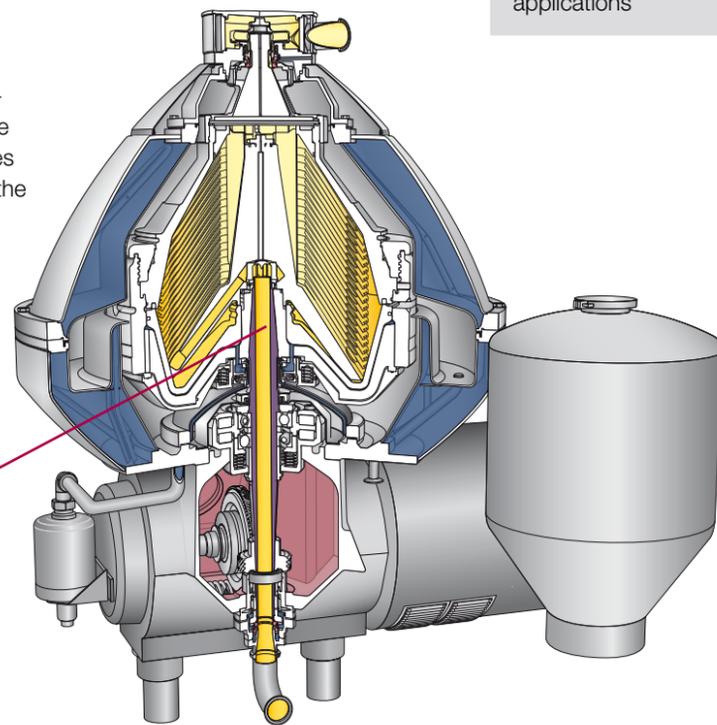
Other applications

In addition to wine, citrus, tea and coffee the Clara range is suitable for a number of other applications such as:

Juice from apples, berries and other deciduous fruits

Tropical juices like passion fruit, mango and pineapple

Various industrial fermentation applications



Fully hermetic Clara separator with Alfa Laval's unique hollow spindle inlet. Its design allows for the smoothest possible feed acceleration.

A size to fit your citrus processing needs

In citrus processing the Clara separators can be used for a number of different clarification duties. Whether your main product is Not For Concentrate (NFC) or juice concentrate, we offer the Clara separator size you need. Alfa Laval's range of citrus separators also includes our CR range of models dedicated to juice de-oiling and cold pressed peel oil recovery.

NFC juice

When producing NFC juice, quality is the very essence of what you are trying to achieve. With state-of-the-art inlet systems the Clara separators are ideally fit for this process, regardless if the duty is to adjust pulp level before pasteurization or as pretreatment to a de-bittering system.

Juice concentrate

For concentrate juice a Clara separator can be used to clarify the juice prior to concentration. With proper clarification evaporator run times can be increased thanks to less fouling.

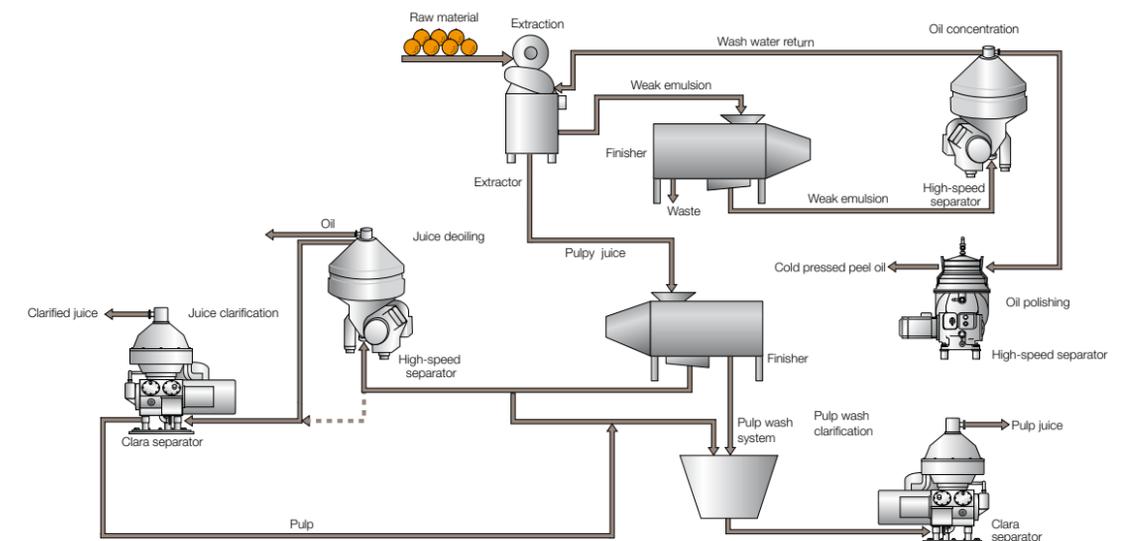
Pulp wash & core wash

In order to maximise the solids recovery also water extractable soluble solids (wesos) need to be recovered. How this is done depends on type of extractors, finishers etc but there is always a suitable Clara separator for the duty at hand.

The capacities depend on the raw material to be processed and the process technology applied.

	Clara 20	Clara 80	Clara 200	Clara 250	Clara 401	Clara 501	Clara 601	Clara 701
NFC juice, m ³ /h	0.5	1	3	3	8	12	10	12
Juice conc., m ³ /h	1	2	8	9	16	20	20	25

Juice production





Making quality wine in less time



For the modern winemaker a Clara separator offers several opportunities to optimize the winemaking process, also from a quality point of view. The processes that need time and hands on care to get the best result, such as fermentation and maturation, should have the time and attention needed. Focus on what is important and let a Clara separator clarify the must or wine with more reliable results, in less time and with less work.

With a continuously working Clara separator the use of kieselguhr filters can be reduced. This cuts costs in buying and disposal of the kieselguhr as well as the manpower needed to clean and prepare the filters.

Must clarification

With a soft press or a decanter for juice extraction there is no need to keep the must in a settling tank. Run it directly through a Clara separator and save time as well as the energy needed to cool the tank. It also requires less space.

As the solids volume discharged from a Clara separator are much less than the tank bottom from the settling tank, a smaller kiesel-guhr filter is needed as well.

Since must is a demanding separator application with high solids load, make sure to chose a model with high efficiency solids discharge, a feature all Clara models have.

Young wine clarification

With a Clara separator its possible to stop the fermentation when you want, simply by running the young wine through the separator. Its of course also possible to separate the wine after its been resting on the lees.

Mature wine clarification

When the wine is ready the storage tanks can be emptied rapidly over the Clara separator, with a clear wine as result.

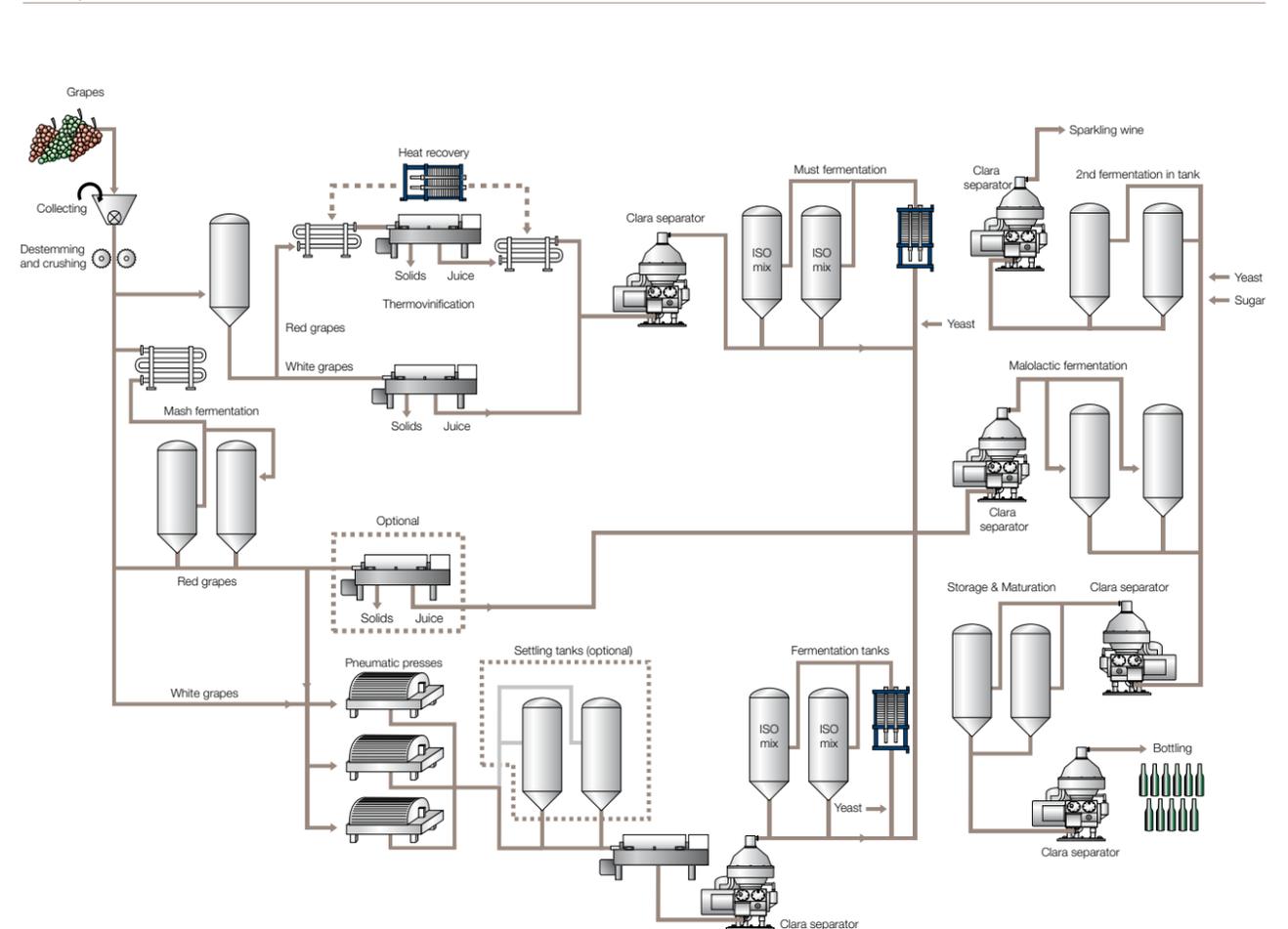
Sparkling wine

When second fermentation is made in a pressure tank a Clara separator can be used to remove the yeast and produce a wine that is truly sparkling clear. A reliable seal is crucial to keep the CO₂ in place.

The capacities depend on the raw material to be processed and the process technology applied.

	Clara 20	Clara 80	Clara 200	Clara 250	Clara 401	Clara 501	Clara 601	Clara 701
Must, m ³ /h	1	3	8	Not suitable	15	15	18	15
Young wine, m ³ /h	2	7	16	18	25	40	30	45
Mature wine, m ³ /h	1	4	12	14	25	35	30	40
Sparkling wine, m ³ /h	NS	4	10	12	20	35	25	40

Wine production





Tea



Take a break with the clearest tea



Tea producers use a wide variety of process set-ups for processing of their product into the varieties of different tea products available on the market. However the same basic techniques are used in making a processed tea product regardless if the customer's end product is Ready To Drink (RTD) tea, tea powder or tea polyphenols etc.

After infusion of tea raw material in hot water, the product is fed via a prefiltration and a cooling step to the clarifier to remove fine particles from the extract. In the clarification step, all modern tea producers can benefit from the high-speed separator technology, which has also proven effective in meeting the customer's requirements. In addition to the Clara range, Alfa Laval offers several other models to complete the range for tea customers of all application duties and capacity requirements.

RTD tea

When producing RTD tea, the demands on clarity of the end product

are exceptionally high, especially when the end product is to be bottled in transparent PET bottles for cold serving. The Clara separators are a perfect fit to this process due to maximum separation capacity and gentle treatment of the product, resulting in a tea with premium clarity.

Tea concentrate

For tea concentrate a Clara separator can be used to clarify the tea prior to concentration. Moreover, with the unique inlet system, a Clara separator has a perfect fit to be used after pre-concentration for removal of precipitations that occur due to pre-concentration and cooling. A Clara separator can also be used for final polishing of the tea prior to final evaporation and drying.

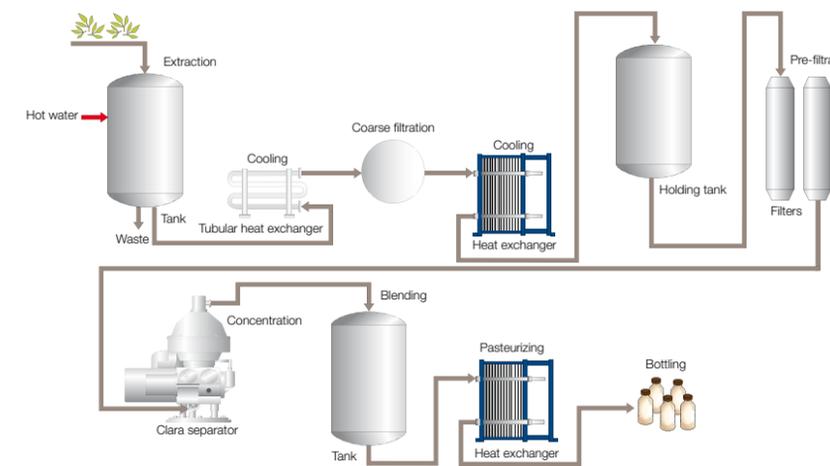
Aroma recovery

In the aroma recovery process the flavour components of the extract are recovered. For the removal of suspended solids from the extract a Clara separator can be used.

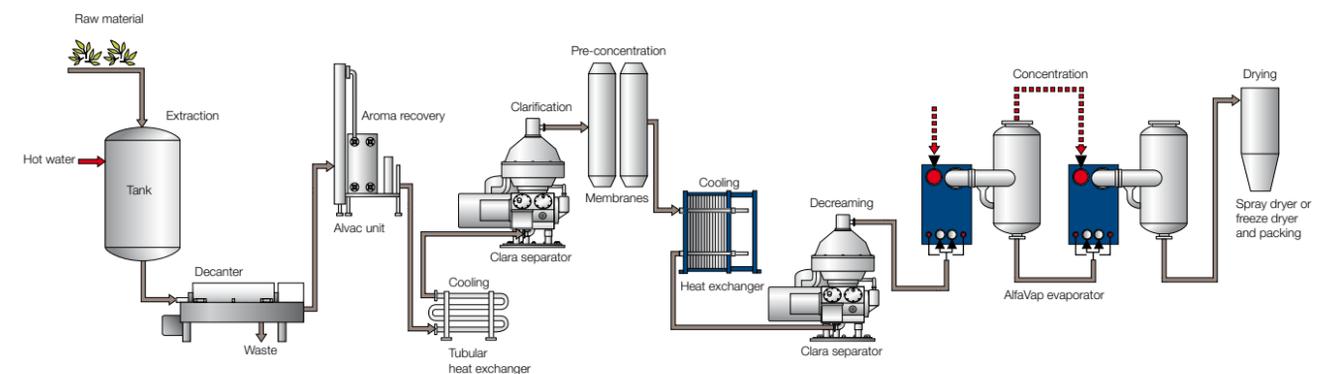
The capacities depend on the raw material to be processed and the process technology applied.

	Clara 20	Clara 80	Clara 200	Clara 250	Clara 401	Clara 501	Clara 601	Clara 701
Tea extract clarification (RTD) m³/h	1	4	10	12	20	25	23	25

RTD tea process



Tea concentrate process



Coffee



Service



Keep that premium coffee flavor and aroma

In coffee processing the Clara separators can be used whether the end customer is producing concentrate coffee, RTD coffee or coffee aromas. Alfa Laval's range of coffee separators also includes models dedicated to processing of spent grounds, coffee deoiling and high density products.

Coffee concentrate

For coffee concentrate a Clara separator is placed in the process line after extraction, to remove insolubles from the coffee extract before going to evaporation. The separator minimizes or eliminates the need for more labour intensive filter equipment. With premium clarification evaporator operation times

can be increased thanks to less clogging and fouling.

RTD coffee

In recent years, the market has seen an increase in the popularity of coffee sold in bottles and ready for consumption. In the clarification step, most modern producers use separators due to their many advantages. With a Clara separa-

tor, a coffee producer can achieve high capacities of premium quality coffee extracts with large throughputs.

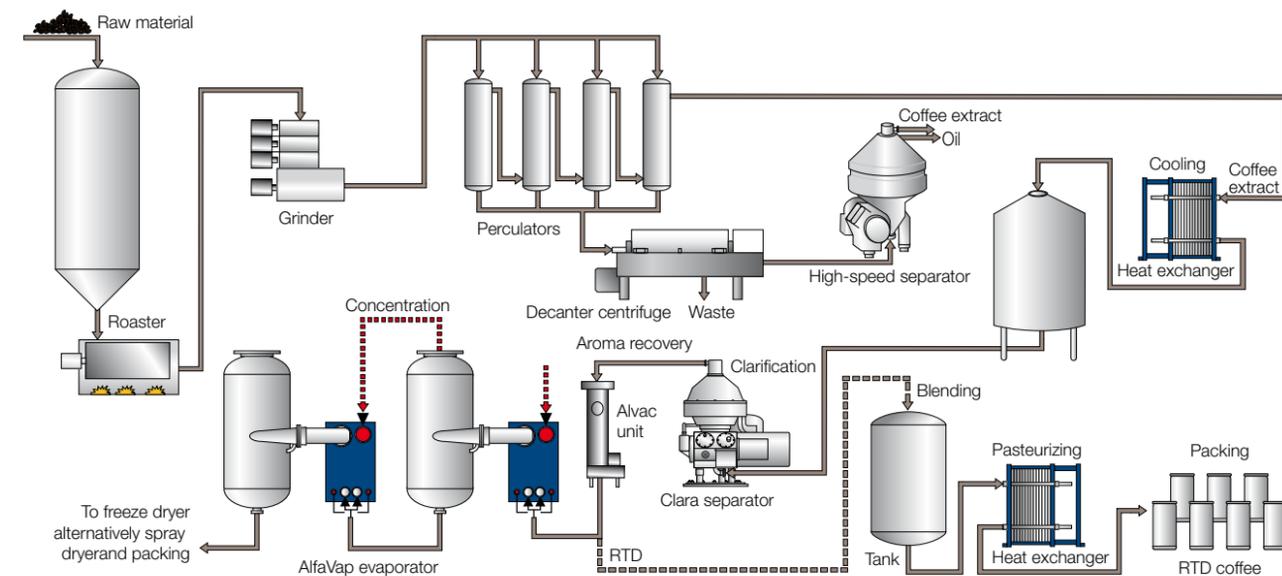
Aroma recovery

In the aroma recovery process the flavour and aromas in the coffee extract are recovered. The Clara separator can be used for removal of suspended solids from the extract.

The capacities depend on the raw coffee to be processed and the process technology applied.

	Clara 20	Clara 80	Clara 200	Clara 250	Clara 401	Clara 501	Clara 601	Clara 701
Coffee extract clarification m ³ /h	0.5	2	6	Not suitable	14	Not suitable	16	Not suitable

Coffee production



Nonstop Performance



Keeping your plant up and running at peak performance is essential for the success of your business. That boils down to support. Alfa Laval sees service as a lifelong commitment to optimizing your plant's performance. This means both being on hand whenever you need us as well as providing predictive maintenance for optimal uptime.

The Nonstop Performance service offer is designed to do just that.

Nonstop Performance

Our service offer is structured into four levels of performance agreements. They range from the One Star level covering basic needs, up to the comprehensive Four Star level where we function as your long-term performance partner. You decide which level is best.

Whatever level of service you need, we work with you to tailor a package that is right for you.

Global service – locally

With over 50 Service Centres worldwide manned with highly trained personnel you can be sure you'll get the service you need – when you need it. Alfa Laval's global spare parts distribution network is unmatched by any other supplier. That means you get parts faster and cheaper. And keep production rolling round the clock.