



## Centribone

### A continuous wet rendering method for processing meat by-products

Alfa Laval Centribone plants provide the most versatile and efficient way to process meat by-products. The continuous wet rendering process can handle any raw material, from purely fatty tissues to the best gelatin bones. The low-temperature process is a totally closed system, especially suitable for processing edible products. With Centribone's state-of-the-art processing, you can now move into more profitable segments in the market of end products.

#### High quality end products

To obtain the highest quality end products, the temperatures of fats, proteins and collagens must be kept as low as possible while processing.

Centribone enables the production of high-quality fats, with outstanding colour, and no increase in free fatty acids (FFA) or peroxide value(s) and with very low moisture content. In the processing of pet foods or edible proteins, Centribone retains the highest possible nutritional values. The amino acid spectrum is virtually unaffected. This is due to the optimized heating programme – with the colour of the proteins and fats confirming its value.

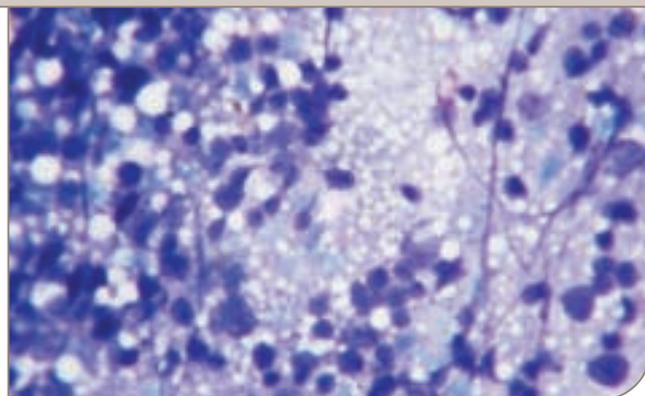
Centribone's continuous processing makes it easy to maintain uniform quality. Producers benefit in terms of ease of operation – and customers appreciate the difference.

#### Flexible production planning

In reducing start-up and shutdown times, Centribone not only makes production more flexible and more efficient, but also allows more time in any production schedule. In a Centribone plant, for example, processing different raw materials such as fatty tissues and bone is possible in successive cycles, if required. Whether you are a large-scale operator or a small one, your productivity is improved.

#### Short-time melting process

The minced material fed to the inlet of the raw material heater is led through the heater by a variable-speed conveyor. The holding time in the heater can be as short as five minutes,



where the temperature is carefully controlled at 65–90°C (150–195°F), depending on the raw materials used and the end product desired. Rapid heating is achieved by injecting live steam directly into the raw material. Fully automatic control of the temperature profile can be obtained through built-in temperature sensors, available as optional instrumentation.

#### Low energy consumption

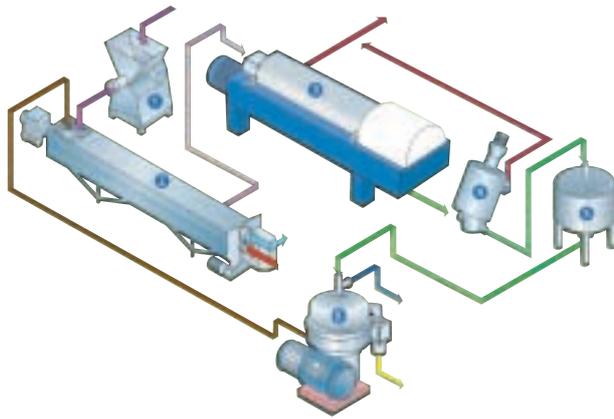
With Centribone, energy consumption is reduced by as much as 30%, compared with dry rendering methods. This is because the decanter and separator remove most of the process water mechanically. And, unlike conventional processes, Centribone becomes more economical to use as the water content of the raw material increases.

#### Flexible throughputs and layouts

Centribone plants can process a variety of raw materials at rated throughputs ranging from 3 to 10 t/h. At higher throughputs, flexible twin-lines are normally recommended. Because of its logical, compact design, a Centribone plant requires minimum space. It can be easily fitted into existing buildings. In addition, it is easy to operate and maintain.

#### Automation

Full automation – ensuring optimum processing conditions at all times – is a readily available option with Centribone. The



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| <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: purple; margin-right: 5px;"></span> Raw material</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: lightblue; margin-right: 5px;"></span> Exhaust</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: red; margin-right: 5px;"></span> Steam</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: lightblue; margin-right: 5px;"></span> Heated raw material</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: green; margin-right: 5px;"></span> Greaves</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: darkblue; margin-right: 5px;"></span> Gelatinous process liquid</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; margin-right: 5px;"></span> Process water</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: orange; margin-right: 5px;"></span> Purified fat</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: brown; margin-right: 5px;"></span> Fines</li> </ul> | <ol style="list-style-type: none"> <li>1. Mincer</li> <li>2. Raw material heater</li> <li>3. Decanter centrifuge</li> <li>4. Strainer</li> <li>5. Intermediate tank</li> <li>6. High-speed, self-cleaning 3-phase separator</li> </ol> |
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ability to log process data, combined with fully continuous processing, creates new opportunities for boosting the quality assurance level of your products at reasonable cost. Centribone gives you the edge in meeting customers' continually increasing demands.

### Expand your processing capacity with optional equipment

- Process water evaporation
- Greaves defatting
- Bone chips for gelatine production
- Edible fat

### Process water evaporation

The water-soluble protein fraction in the process water may be recovered as a protein concentrate by applying the compact, AlfaVap™ evaporator system. The concentrate can be used as a flavour component, or be added to the solids fraction ahead of the drying process.

### Greaves defatting

Demand for low-fat contents is increasing, notably from pet food manufacturers. Alfa Laval special defatting plants are applicable for any raw material processed in a Centribone plant. Depending on the end products, fat levels can be reduced as much as 50%.

### Bone chips

Special plant components can be integrated into the Centribone plant for production of suitably degreased and sized bone chips for gelatin production.

### Edible fat

Precise, constant cooling is a must for the retail packing of fat. Alfa Laval Centricool plants provide superior temperature control, the key to fat-packing efficiency.

### Typical products from Centribone

	Solids-TS (%)	Fat (%)	Moisture (%)
Greaves, fatty tissues	30–35	6–10	65–70
Greaves, mixed material	40–45	5–8	55–60
Bone greaves	55–60	2–3	40–45
Fat, all materials		99.8	<0.2

### Approximate throughputs and consumption figures

Plant characteristics/Plant type		CBD 3000	CBD 5000	CBD 10000
Throughput	(t/h)	2.5–3.5	4.5–5.5	9–10
Consumption	(kWh/h)	99	137	166
Steam	(kg/tRM)	175	175	175
Approx. space req.	(sq m)	90	95	105

### How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit [www.alfalaval.com](http://www.alfalaval.com) to access the information direct.