

# CIMBRIA SKET

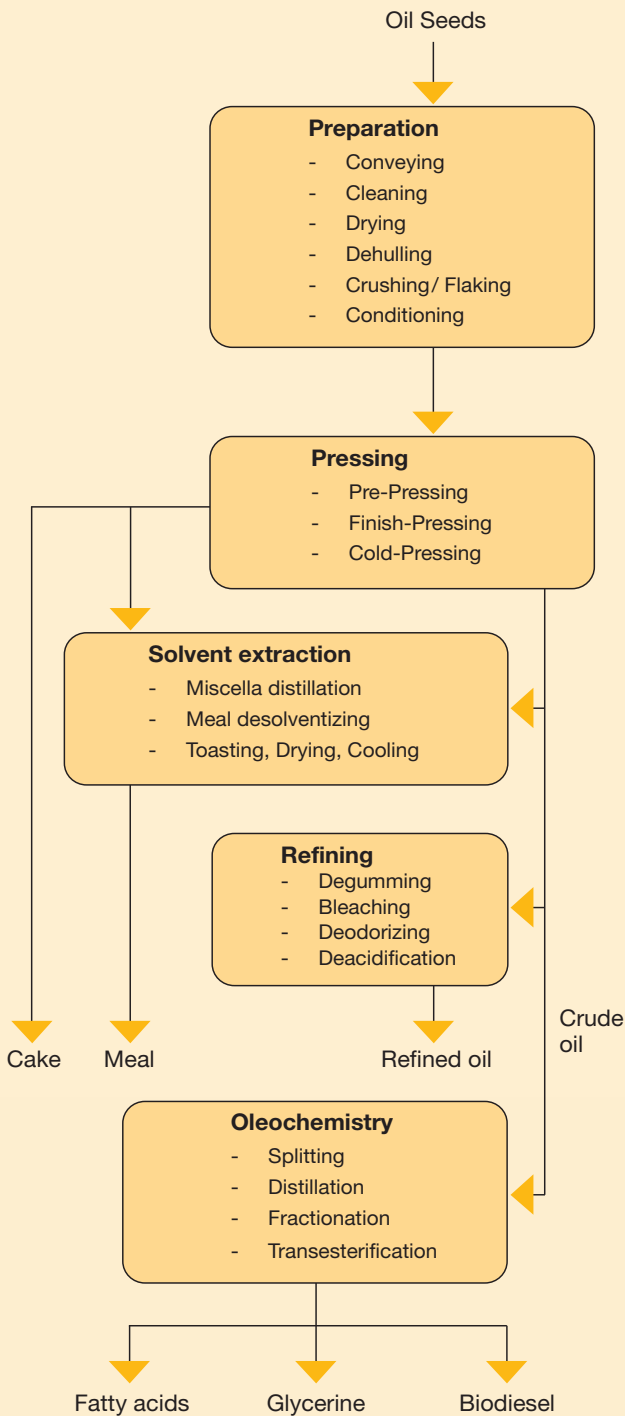
Oilseeds Processing Technologies





## About the Company

### Oil Seeds Processing Technology



CIMBRIA SKET GmbH is pleased to familiarise you with its numerous activities as a manufacturer of equipment for producing and refining of vegetable oil.

The company with its head office in Magdeburg has a tradition of more than 100 years as a world-wide supplier of small and large-capacity plants used in the food industry and oleochemistry to produce edible oil, glycerine, fatty acid and, nowadays, even such products like biodiesel. CIMBRIA SKET GmbH is a member of the Danish CIMBRIA Group of Companies operating world-wide in the field of seed technology as a supplier of handling, cleaning, drying and storage equipment plus complete systems for the production of mixed fodder for livestock breeding. Close contacts with our customers and long years of experiences from our testing plant are a sound basis for continuous development and improvement of equipment and technologies. The company is facing the challenges of environmental protection and makes any efforts for reduce consumption of power and chemicals thus contributing to a clean environment as a natural space for living.

Activities of the company are mainly focused on equipment for:

- Extraction of crude oil from oil seeds
- Refining, hardening, winterization and fractionation of vegetable oils
- Cracking of vegetable oils to generate fatty acids and glycerine
- Transesterification of vegetable oils for the production of Biodiesel





## Seed Preparation and Conditioning

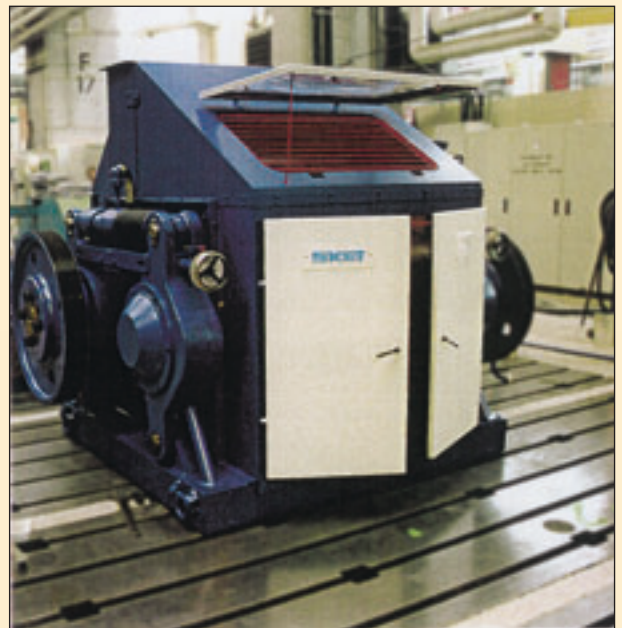


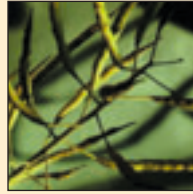
One of the most important process-stages in the oilseed processing to get the highest oil yield and the best quality for your oil and cake/meal, is a proper seed preparation in the manner described below.

The function of the seed preparation is to properly prepare the different kinds of oil bearing material by mechanical processes to make the oil more accessible to the subsequent oil extraction procedure by pressing and/or solvent extraction.

Preparation mainly comprises the following process stages:

- Fine cleaning - to remove all undesirable contaminants and impurities, like sand, stones, sticks etc. and ferro-magnetic particles which might be included in the seed by using Cimbria's Delta-Cleaners.
- Dehulling - to reduce the fibre content and increase the protein content by using Cimbria's impact (sunflower) or diskmill (cotton) dehuller and hull separator.
- Flaking - for mechanical destruction of the oil bearing cell walls, making the oil more accessible in the subsequent oil extraction process by using Cimbria's crushing and/or flaking mills.
- Conditioning: - hydro-thermal process stage to enhance the oil extractability by using Cimbria's vertical stacked agitated cookers or horizontal type conditioners. The most important effects: control the moisture level, coagulate seed protein and destroy moulds and bacteria.





## Pressing



Oil quality and efficiency of oil production are largely dependent on the applied pressing technology.

CIMBRIA SKET GmbH supplies a high-performance type series of screw presses. A great deal of experience gained from supplying complete oil mills to more than 25 countries and intensive research in the fields of:

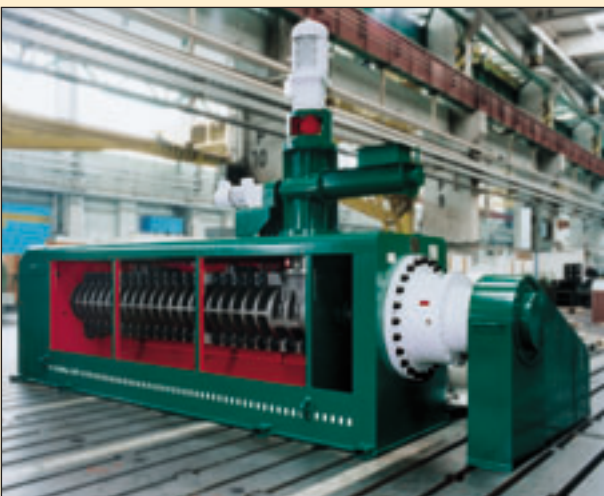
- Pre-pressing with subsequent extraction
- Pre-pressing and finish-pressing
- Finish-pressing
- Cold pressing



in co-operation with renowned partners from universities and with users of oil mills helped us to find efficient solutions for oil production.

New technologies for production of high-grade core oils are under technical implementation. Hydrothermal methods of seed preparation in stack cookers or horizontal dryers employed in combination with barrel-type screw presses are the guarantee for optimum results in any applications.

Modern drive configurations based on robust and low-noise planetary gears provide energy-saving and environmentally compatible solutions for our customers. Wearing parts are of armoured design to ensure a long service life of tools.





## Engineering and Service



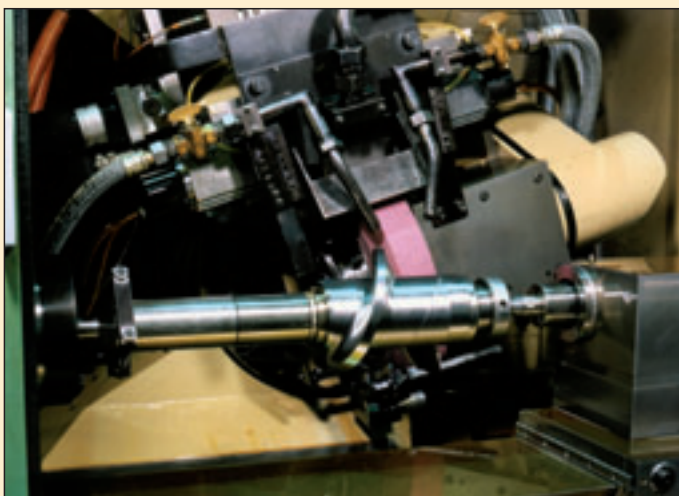
CIMBRIA SKET GmbH does not only supply plants and equipment but also has highly motivated and qualified staff members ready to provide the complete service from supply to commissioning of equipment. Effective after-sales service following successful handing-over of the equipment to the customer form an essential aspect of CIMBRIA's business philosophy.

All these activities meet the general quality standards of CIMBRIA SKET GmbH on the basis of an internal Quality Management System. Latest hardware and software configurations used are essential tools of planning and design to ensure successful project implementation. 3D graphic systems enable the planning engineer and the customer to get a realistic insight into the equipment even before erection is started.

Based upon our overall competence as an equipment supplier, we offer tailor-made solutions for:

- Authority engineering
- Feasibility studies
- Financing concepts.

Our effective system for providing wearing parts guarantees a high standard of plant availability, a typical example of which is the implementation of CIMBRIA's own technical solutions for armouring screw and barrel parts.





## Refining of Vegetable Oils

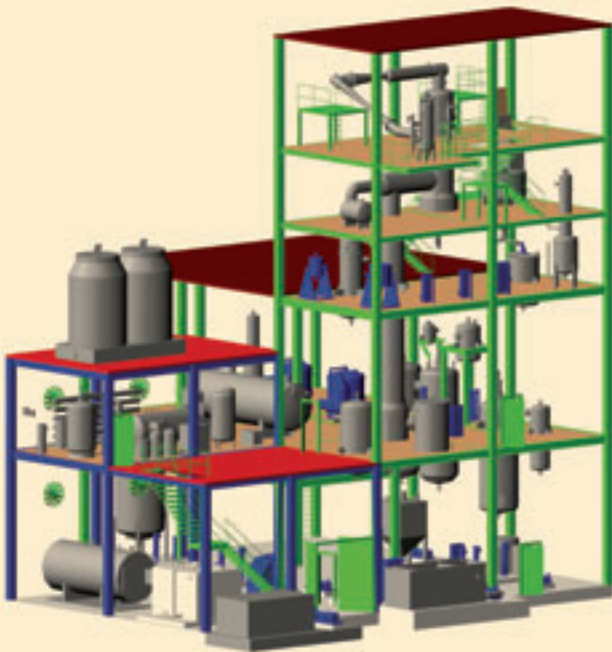


Vegetable oil produced by pressing and/or extraction contains a number of companion substances to be removed in the subsequent refining operation. CIMBRIA SKET GmbH offers equipment not only for degumming and bleaching but also for alkaline or physical deacidification followed by deodorization.

CIMBRIA SKET GmbH supplies equipment for deacidification and deodorization on the basis of physical refining (distillative deacidification) as a cost-saving and environmentally compatible solution ensuring careful treatment of the product whenever possible. Use of energy-saving columns with structured packings is specifically recommended in such cases since the latter are suited even for operational modes where frequent product changes with minimum product losses are required.

Refined oils may be further improved by winterization, dewaxing and catalytic hydration (hardening).

Refined vegetable oil produced in equipment made by CIMBRIA SKET GmbH meets highest quality requirements. Evaluations to DGF and AOCS codes and standards have demonstrated its unique quality features. Such a high level of product quality is a sound basis for further product improvement and/or product developments.





## Biodiesel, Glycerine and Fatty acids



Vegetable oils and fats are not only a good source for the production of food but they are also substantially important basic products for the oleochemical industry.

During the past years, transesterification of vegetable oils into Biodiesel with the possibility of moreover receiving glycerine as a side product has become more and more important in the field of using vegetable crude material.

The sustainable production of alternative fuels is one possibility to partially replace the disappearing mineral crude oil world resources. Fuels out of vegetable oils are moreover one possibility to reduce CO<sub>2</sub> emissions and to therefore reduce the discharge of environment harming gases.

The additionally gained distilled glycerine offers various possibilities of use and is a good replacement for synthetic glycerine. Cracking of oils and fats produces fatty acids and glycerine needed as the starting stock for making many other products.

High-pressure cracking is one of the latest and most efficient methods for producing raw fatty acids and glycerine water.

Fatty acids may be produced by distillative generation of fatty acid mixtures and subsequent fractional splitting under thorough process control. Packing columns and falling-film evaporators stand for low processing temperatures and, consequently, minimum residence times.

Products from equipment made by CIMBRIA SKET GmbH are the ideal feedstock for further processing operations.



