FAT AND OIL PROCESSING



Olive Oil Processing

Measured temperature control and supporting utilities around olive-oil extraction.

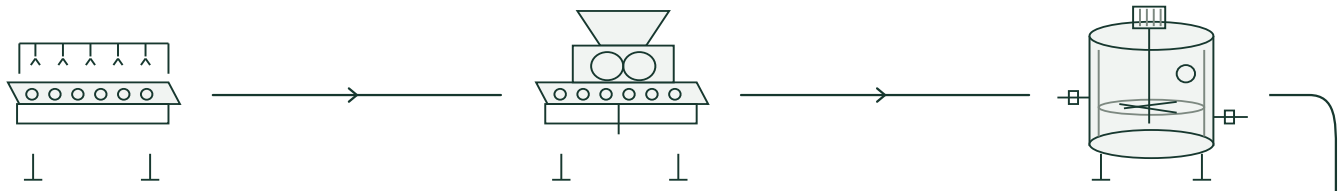
Olive oil, in the product context.

Photo / Roberta Sorge

MATERIAL ROUTE / EQUIPMENT / BRANCHES

Separate the oil, then protect its character.

Harvested olives / paste / extracted oil



Reception and cleaning

Leaf removal; sound fruit

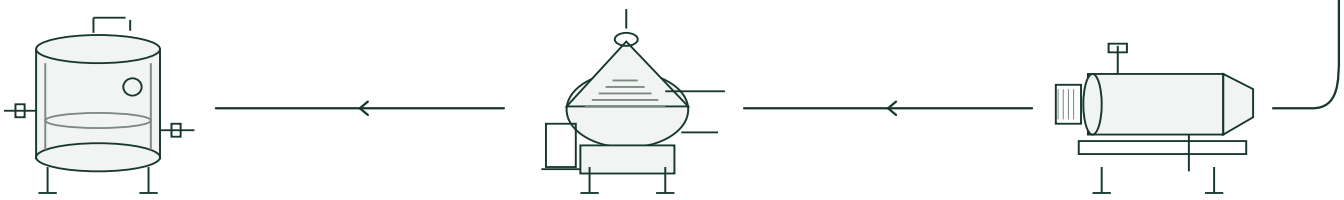
Crushing

Prepare olive paste

Malaxation

Slow mixing; controlled conditions

Main product route / follow the connected material path.



Oil storage and finishing

Temperature; filtration and packaging

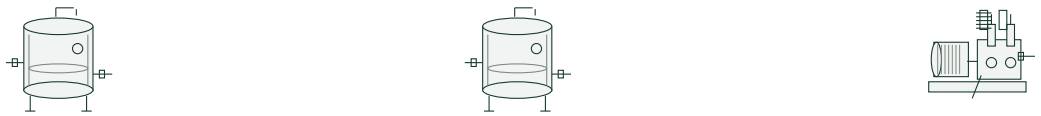
Oil clarification

Remove residual water and solids

Decanter extraction

Selected two- or three-phase separation

Pomace and aqueous outputs depend on the extraction arrangement.



Pomace collection

Aqueous fraction

Optional N2 boosting

SonFlow / qualified thermal duties; DanPumps S-MP / compatible utility circuit; Mehrer TZW / optional nitrogen pressure boosting.

PROCESS STUDY / 01

Prepare the fruit with restraint

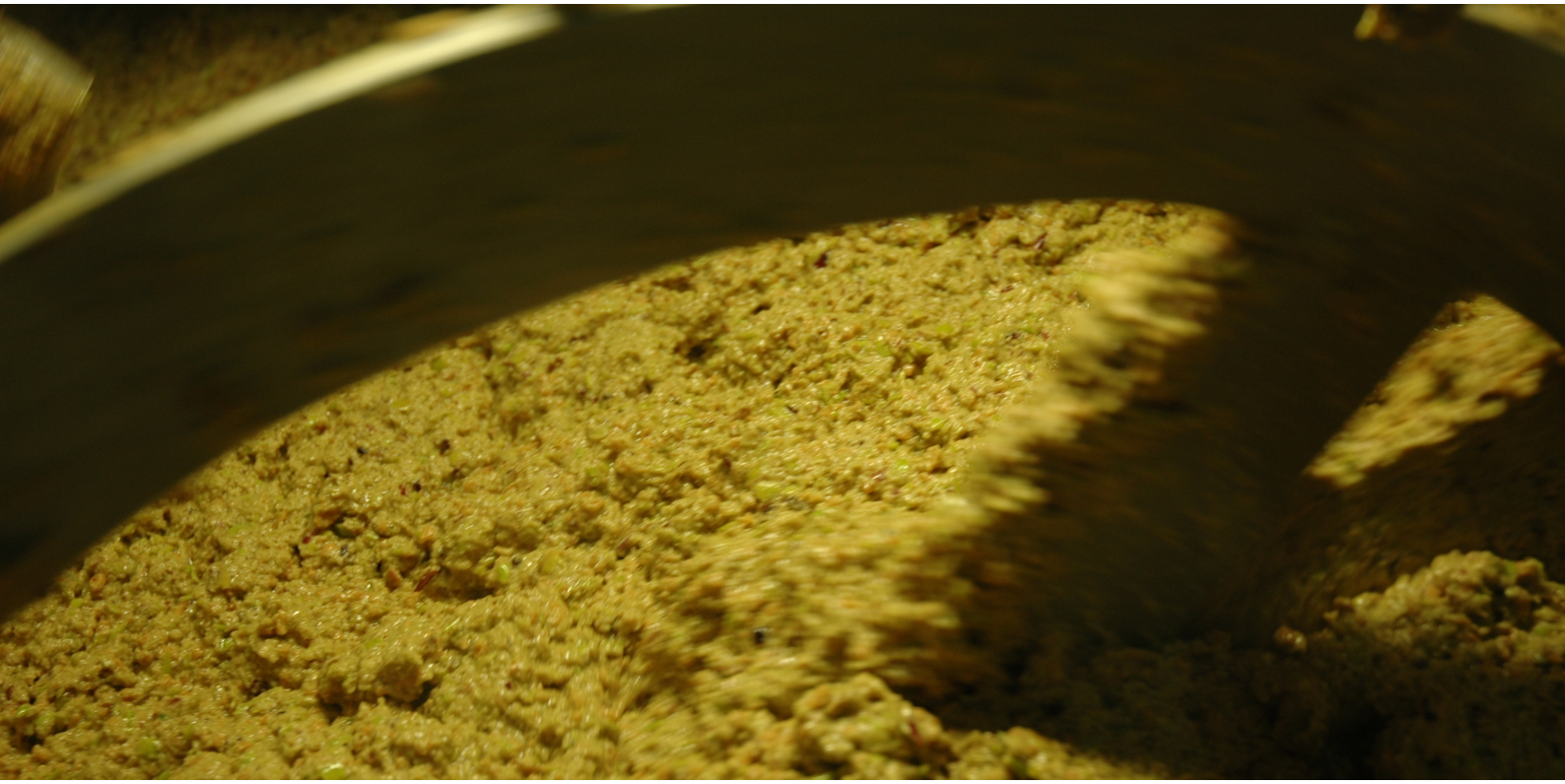


Olive handling on a conveyor in Spain

Photo / Carlos Alonso

Reception, leaf removal and washing prepare olives for crushing. Fruit condition and the interval between harvest and processing influence the quality available to the mill. Crushing creates a paste containing oil, water and solids; the chosen crusher affects how that paste enters the next stage. This is not a clear-liquid pumping duty. Remove foreign matter and establish the actual particle and moisture distribution before assessing transfer or heat exchange. The photographed conveyor illustrates olive handling, while the malaxation study shows the subsequent paste stage. A product-contact exchanger can be investigated only for a defined thermal duty, with flow, fouling and product-quality effects confirmed by trials.

PROCESS STUDY / 02



Malaxation precedes specialist separation

Malaxation mixes the paste under controlled conditions so oil droplets can combine before extraction. Temperature, time and oxygen exposure must be considered together with the desired oil quality and recovery. Dedicated decanters then separate the selected oil, water and solid fractions; the exact arrangement depends on the mill's two- or three-phase route. Oil polishing or further clarification follows where required. Lecoqimex heat-transfer and pumping components support selected duties around this route; they do not replace a malaxer, decanter or oil separator. Keep paste and separated-oil duties distinct when specifying equipment because their hydraulic and cleaning demands are fundamentally different.

Malaxation of olive paste.

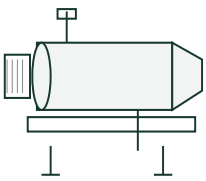
Photo / Iworkwithyou / CC BY-SA 3.0 / cropped & resized

PROCESS STUDY / 03

Storage is still a quality operation

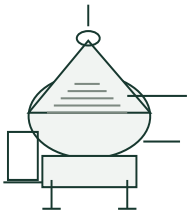
Separated oil is held, optionally filtered and packaged according to the product specification. Control temperature and limit avoidable oxygen exposure in storage and transfer. An engineered nitrogen blanket may be considered where the storage design and quality strategy require it. Mehrer provides oil-free nitrogen compression, and a TZW family selection can be assessed if the existing nitrogen source needs pressure boosting. The compressor does not generate nitrogen, control tank blanketing or establish food-grade gas quality on its own. Define the gas source, purity, pressure regulation and vessel requirements separately. Choose the oil-transfer pump using viscosity at the actual storage temperature.

OPERATION STUDY / SELECTED PROCESS DETAILS



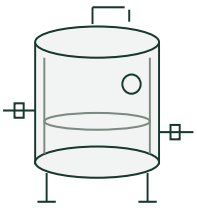
Decanter extraction

Separate the oil from the wet solids using the selected two- or three-phase process.



Oil clarification

Remove remaining water and olive residues using the chosen clarification route.



Storage and finishing

Maintain appropriate handling conditions, with filtration and packaging as specified.

Explanatory equipment studies / configuration, controls and treatment conditions follow the selected product route.

MEHRER / TZW / NITROGEN BOOSTER STUDY

Supply the pressure the gas route needs.



Assess nitrogen boosting only where the defined source pressure is insufficient for the engineered storage or packaging duty. Compression is one component of the gas supply.

MEHRER / TZW FAMILY STUDY

Confirm gas purity, inlet pressure, flow, cooling and regulation. A booster does not generate nitrogen or establish food-grade gas quality by itself.

EXPLORE MEHRER /

SONFLOW / SANITARY PLATE HEAT EXCHANGER

A measured oil-side duty

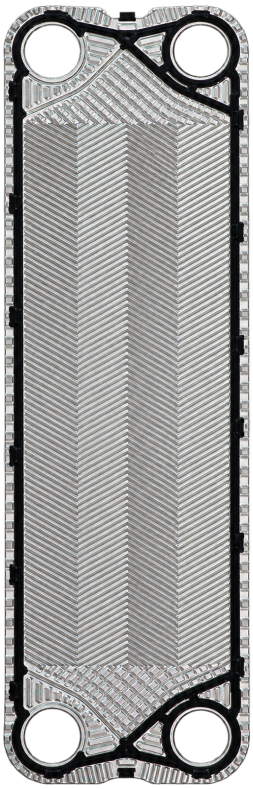


PLATE / FLOW PASSAGE



FRAME / COMPLETE UNIT

SonFlow lists olive oil among its heat-transfer applications. Evaluate a sanitary configuration for a defined liquid-oil heating or cooling need where the process specification calls for it.

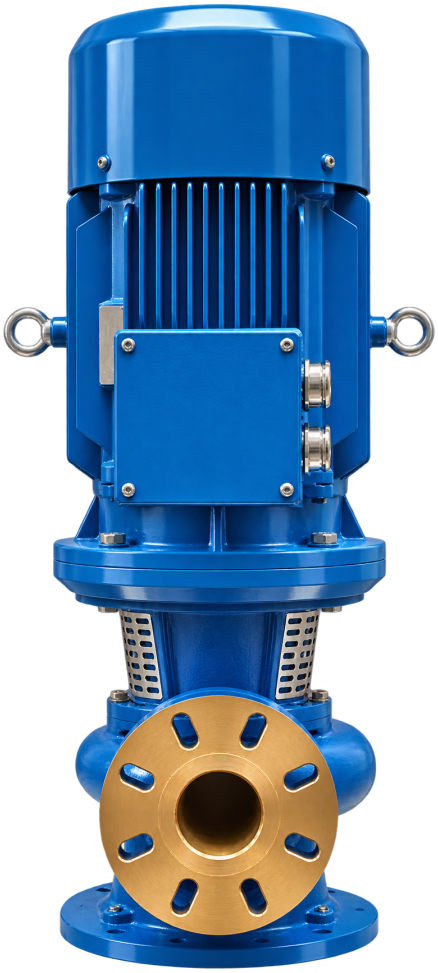
Confirm the finished-oil quality objective, operating conditions, gasket compatibility and hygiene requirements. Heating is not automatically desirable for every olive-oil route.

EXPLORE SONFLOW /

DANPUMPS / S-MP / COMPATIBLE UTILITY-CIRCUIT STUDY

Support the thermal circuit

The supplied bronze-body image represents the S-MP inline family. Assess it for a separate, chemically compatible utility-water circuit using the actual flow, head and temperature. Product transfer remains a distinct hygienic selection.



DANPUMPS / S-MP BRONZE-BODY INLINE FAMILY STUDY

S-MP and S-IP are different material executions: the catalogue lists bronze for S-MP and cast iron for S-IP. The pictured S-MP is not a verified food-contact pump. Confirm material compatibility and the selected curve.

EXPLORE DANPUMPS /

CONTROL THE PROCESS OUTCOME

Protect the oil's identity.

Track raw-fruit condition, processing temperature history, recovery and the specified chemical and sensory quality. Avoid implying that a particular component guarantees an oil grade. Evaluate thermal trials for both extraction behaviour and final oil quality. Cleaning and drainage arrangements should prevent water or chemical carryover into finished oil. Storage monitoring covers the tank and transfer path as well as the gas supply.



Olive trees: the material begins in the grove.

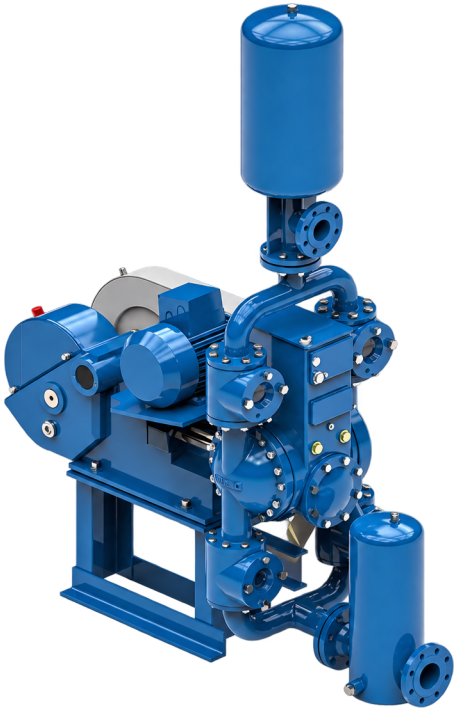
Photo / Lucio Patone

VERIFY AT THE RELEASE POINT

The right brief begins with the mill's operating pattern: harvest-season hours, batch changes and the actual heating or cooling need. State the desired temperature profile, product viscosity and allowable pressure loss. Review cleaning and seasonal shutdown together, so that access and maintenance are planned as carefully as nominal thermal performance.

THE AUXILIARY ROUTE

Consider the whole mill.



ABEL / CM COMPACT DIAPHRAGM FAMILY

Pomace and aqueous fractions differ between extraction arrangements. Identify their destination and handling conditions before specifying a residual pump. Heat recovery must respect the modest thermal needs and quality priorities of the paste route. Nitrogen boosting is an option only where a real pressure deficit exists. Seasonal throughput also affects the value of any recovery investment.

The extraction arrangement determines aqueous and pomace branches. Finished-oil storage and optional nitrogen blanketing follow specialist oil separation.

EXPLORE THE RELATED EQUIPMENT /

TURN THE ROUTE INTO A USEFUL ENQUIRY

Specify the material. Define the duty.

The right brief begins with the mill's operating pattern: harvest-season hours, batch changes and the actual heating or cooling need. State the desired temperature profile, product viscosity and allowable pressure loss. Review cleaning and seasonal shutdown together, so that access and maintenance are planned as carefully as nominal thermal performance.

01 Fruit condition and processing delay

02 Paste temperature and residence time

03 Two/three-phase extraction route

04 Oil viscosity and storage oxygen target

05 Nitrogen source, purity and required pressure

RESEARCH BASIS / SELECTED PRIMARY REFERENCES

Alfa Laval olive oil processing / Alfa Laval AlfaOliver 500: how it works / Alfa Laval olive oil process solutions / SonFlow sanitary exchangers / SonFlow sanitary and food industry / DanPumps S-IP/S-MP

PHOTOGRAPHIC REFERENCES

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BEGIN THE CONVERSATION

Let us begin with your process.

Tell us about your stream, the operating conditions and the result you want to achieve.

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Olive Oil Processing / Fat and oil processing