



Alfa Laval RM overflow malaxer

Malaxers for continuous olive oil extraction

Introduction

Malaxing machines are covered and jacketed holding tanks in which the olive paste is continuously agitated at a controlled temperature.

Application

Malaxing is a crucial step in the olive oil extraction process, because it plays a major role in determining the quality and quantity of the product obtained. The combination of time and temperature affects the enzymatic activity responsible for the release of the oil. Together with the amount of oxygen in contact with the paste, this greatly influences the product obtained from the olives.

RM6000 and RM9000 malaxers are normally used in high volume, industrial style olive oil extraction lines where robustness and continuous operation are key considerations.

Benefits

- Heat transfer configuration that protects oil quality.
- Mechanical reliability that keeps operating costs down.
- Designed for easy cleaning.

Design

The vessel containing the olive paste has an innovative cylindrical shape that optimizes the malaxing process by eliminating dead spaces and maximizing the heat transfer area compared to traditional 'U'-shaped malaxers.

Each malaxer features independent gear motor, paste temperature measurement and a dedicated hot water pump to circulate water through the jacket at adjustable speed. The jacketed vessel contains an agitator that has an exclusive flexible junction between the shaft and the gear motor providing maximum mechanical resistance.

Malaxers are fitted with a cover with a safety micro switch and a grated inspection window. RM6000 and RM9000 units also have an external rotating conveyor that keeps the inner surface of the malaxer wall clean from olive paste. This helps prevent overheating and makes sure the paste has a homogenous temperature.

The special design of the blades and the external conveyor for mixing do away with any need for internal segmentation of the mixing tank, and the loss of mixing efficiency this would cause.



Because there are no segments inside the tank, cleaning is easy and dismantling for any extraordinary maintenance is quick and straightforward.

All parts of the jacket vessel that come in contact with the product are made of stainless steel.

Working principle

The malaxing process consists of a slow stirring of the olive paste while it is being heated. This combination causes the microscopic oil and water drops to coalesce, forming increasingly larger drops, which can then be recovered in a horizontal decanter centrifuge. The malaxing temperature and time are both carefully controlled.

The agitator in each malaxer constantly blends the paste while also continuously removing paste from the vessel wall to prevent overheating. Hot water is circulated through the jacket of each malaxing vessel to control the temperature of the paste.

Rapid water recirculation and a small volume of water inside the jacket makes it possible to reach a paste temperature set point with a water jacket delta temperature of 5–7°C. The special design of the jacket also includes insulation that makes it possible to maintain the desired temperature.

Paste from the final malaxer is pumped to a horizontal decanter centrifuge for oil recovery.

The number and size of malaxers is based on capacity requirements and desired malaxing time. Two to three malaxer tanks are normally used in series on top of each other, although a single malaxer can be used to upgrade an existing extraction line.

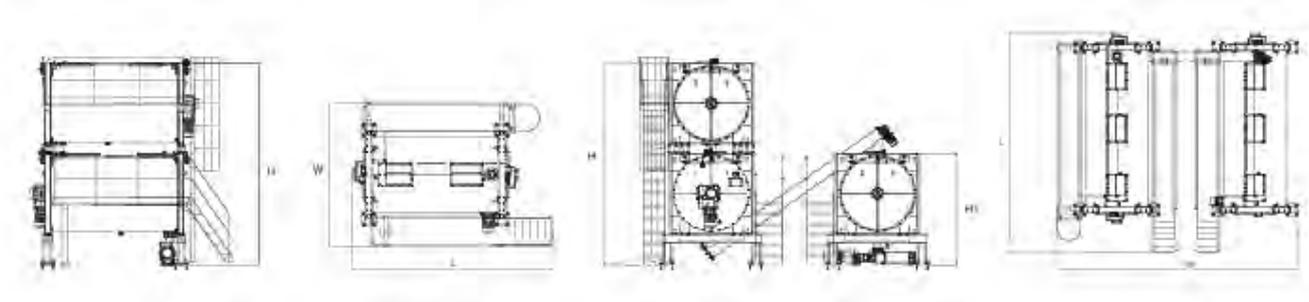
The malaxers are arranged so that the paste continuously overflows from one to the other by gravity. Paste transfer from one malaxer to another can also be done by conveyor.

RM6002/9002

RM6002/9002

RM9003

RM9003



Technical data	RM6002 – Double malaxer		RM9002 – Double malaxer		RM9003 – Triple malaxer	
	kg	lbs	kg	lbs	kg	lbs
Tare weight	7,510	16,557	8,610	18,982	13,520	29,806
Weight with full load (fruit and water)	19,542	43,083	27,010	59,547	41,120	90,654
Sound pressure level L _{pf}	57 dB	57 dB	57 dB	57 dB	57 dB	57 dB
Installed power	11.7 kW	11.7 kW	18.7 kW	18.7 kW	31 kW	31 kW
Length (L)	4,733	186	6,170	243	6,240	246
Width (W)	3,360	132	3,360	132	6,840	269
Height (H)	4,752	187	4,752	187	4,752	187
Height (H1)	-	-	-	-	2,632	104

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