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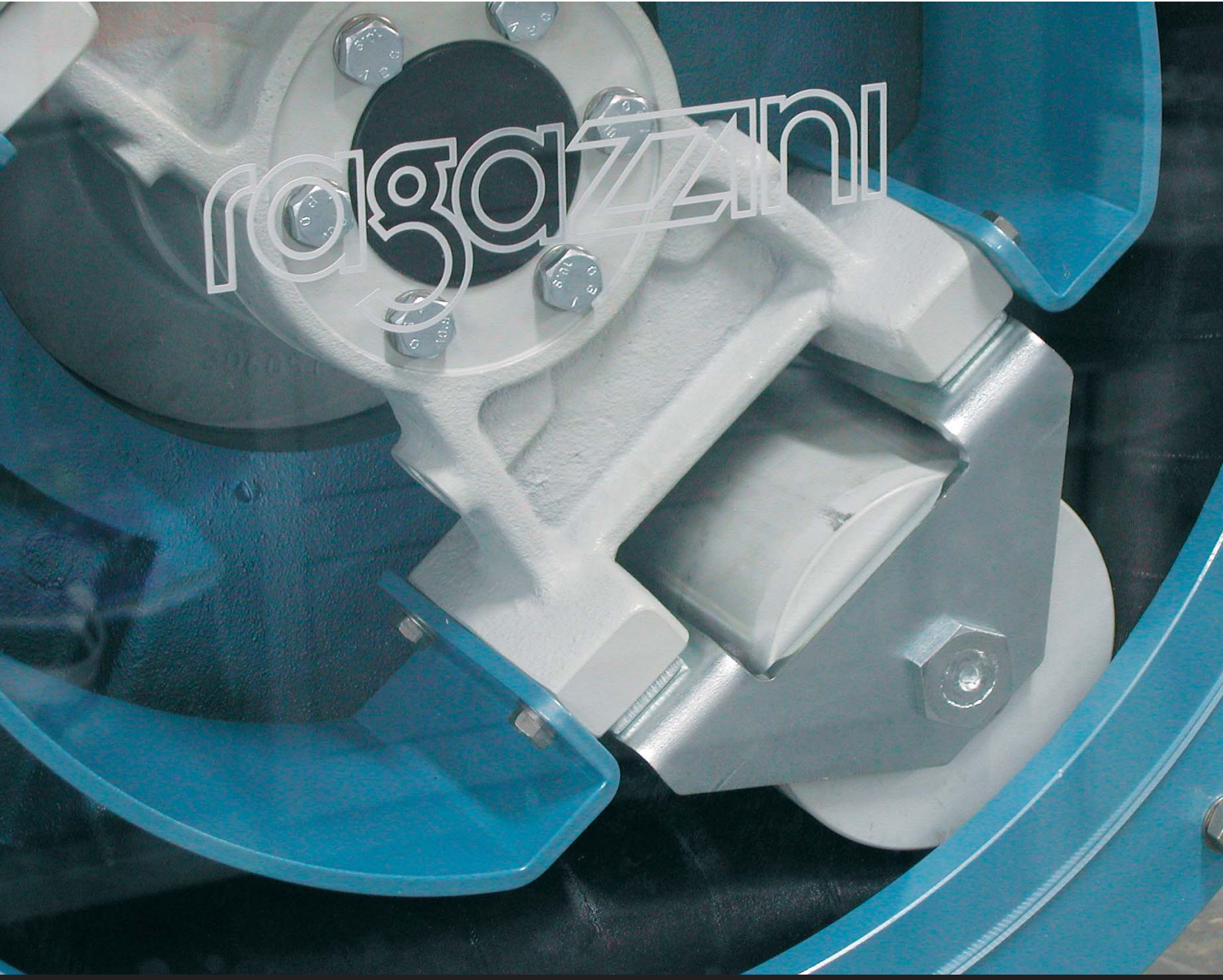

We have been manufacturing pumps for over 60 years, and from the early years we have especially focused on the research and development of the peristaltic pump. Today we are in a position of proposing solutions for every industrial field with the reliability and quality that we have built our success upon.

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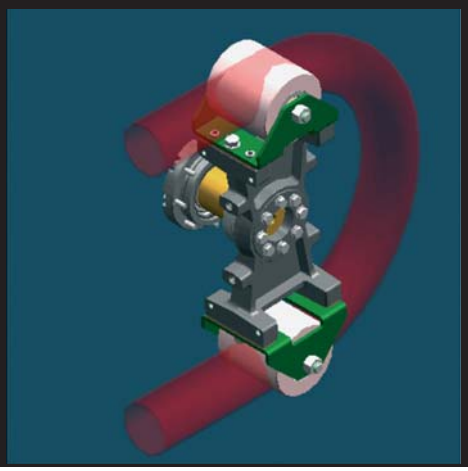
Simple Principle

The basic principle of the peristaltic pump traces back to human "peristalsis" a term referring to the alternating contraction and relaxation of muscles around a tube to force the contents through it.

An elastomeric tube is squeezed along a length by rollers that push the fluid contained within. The tube's restitution after squeezing produces a vacuum that draws fluid continuously into the tube. This creates a gentle pumping action that doesn't cause any damage to the product. Contaminations are avoided because the fluid is contained within the tube (one contact part with product). The pump employs a rotor with rollers mounted on it that continually compress and occlude some portion of the tube. This action moves the fluid through the tube with a constant rate of displacement for each revolution of the rotor, enabling a precise measurement of the volume of fluid pumped through the tube.

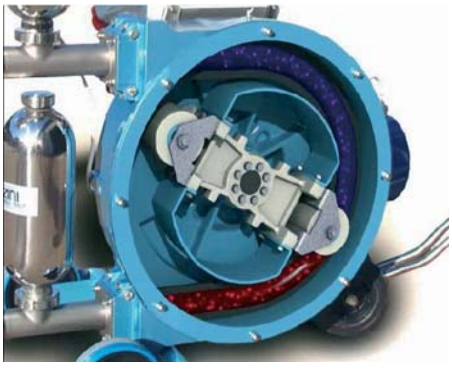
Rotho®



The Rotho Pump

The "roller on bearings" design of the Rotho pump offers many advantages:

- It eliminates the requirement for adding a lubrication fluid inside the pump housing, because there is no friction on the surface of the tube therefore giving a longer tube life.
- They can transfer food products with no con tamination hazards, as the pump housing is lubrication free.
- With no lubrication fluid required, hose replacement is greatly simplified and cheaper without having to drain and dispose of a messy and possibly contaminated oil or glycerine solution.



Rotho's advantages

~ The most gentle pumping action available

~ No contact with moving mechanical parts during pumping

~ Totally sealed pumping system

~ Can be operated dry without damage

~ Self-priming wet or dry with negative heads up to 8,5 m

~ Max rotation
rpm n.50 mod. SDF
rpm n.70 mod. MS
rpm n.100 mod. PSF

~ Can be reversed and run in either direction

~ No oxidation

~ No contamination

~ Only the smooth and soft internal tube layer contacts fluid

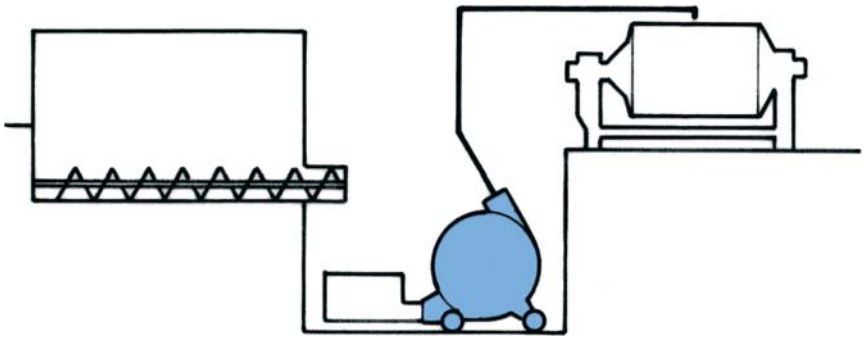
~ No crushing of stems, berries or seeds

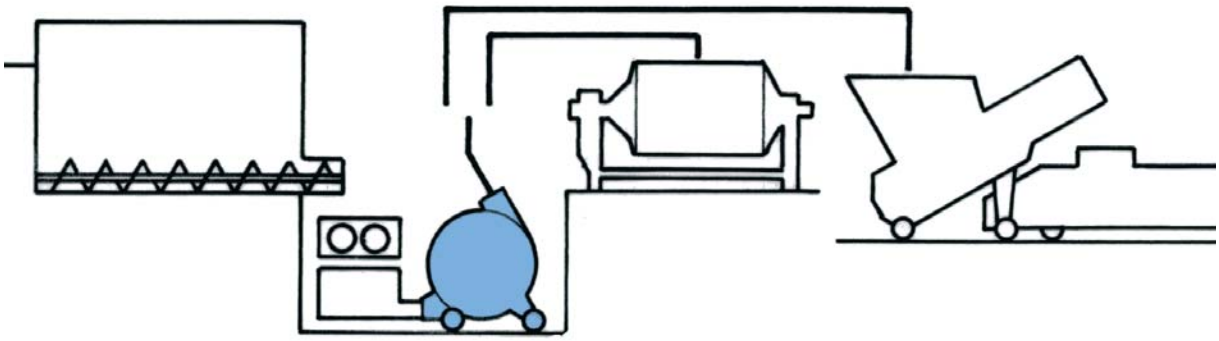
~ No seals or check valves to cause obstructions or wear

Rotho®

For WHITE wine processes

- The Rotho peristaltic pump does not damage the grapes, skins, or seeds, during pumping.
- The stems are not crushed or broken stems or whole clusters pass easily through the ROTHO pumps.
- Can be operated dry without any damage.
- Comparative tests have shown that more than 50% of the whole berries being pumped pass through the ROTHO pumps totally intact and without damage
- Tests have shown that when pumping white whole berries, crushed berries or whole clusters with the Rotho system there is a 10-15% lower polyphenol content than with traditional systems.





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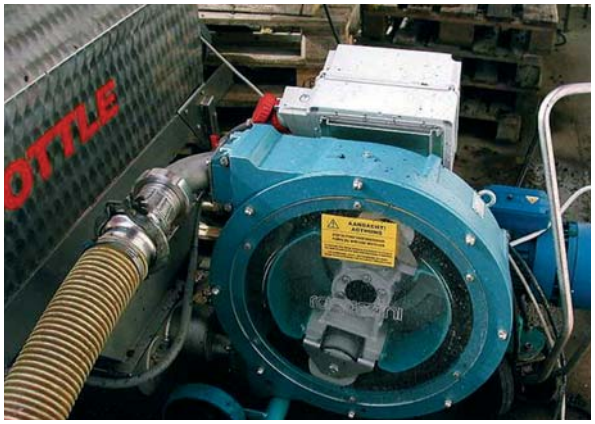
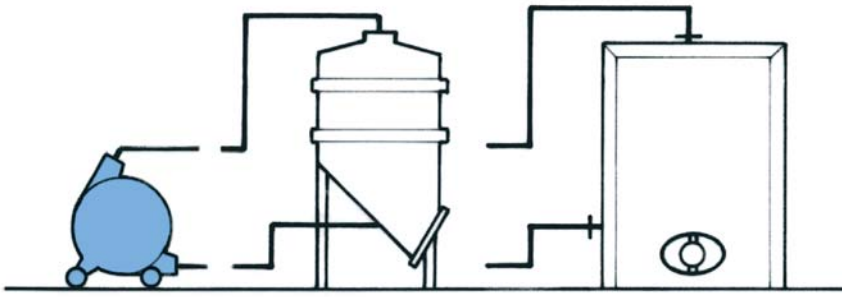
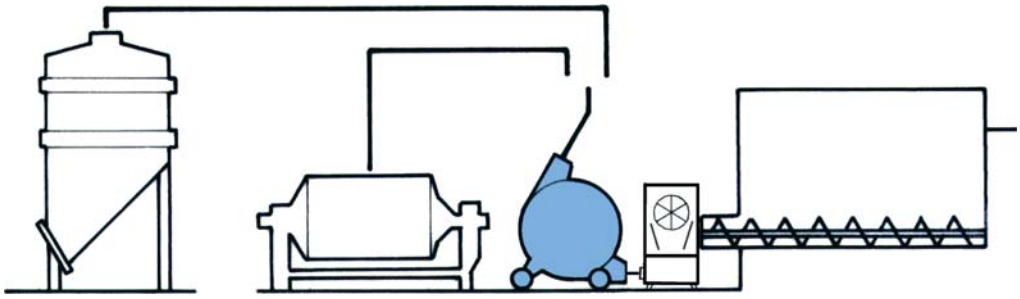
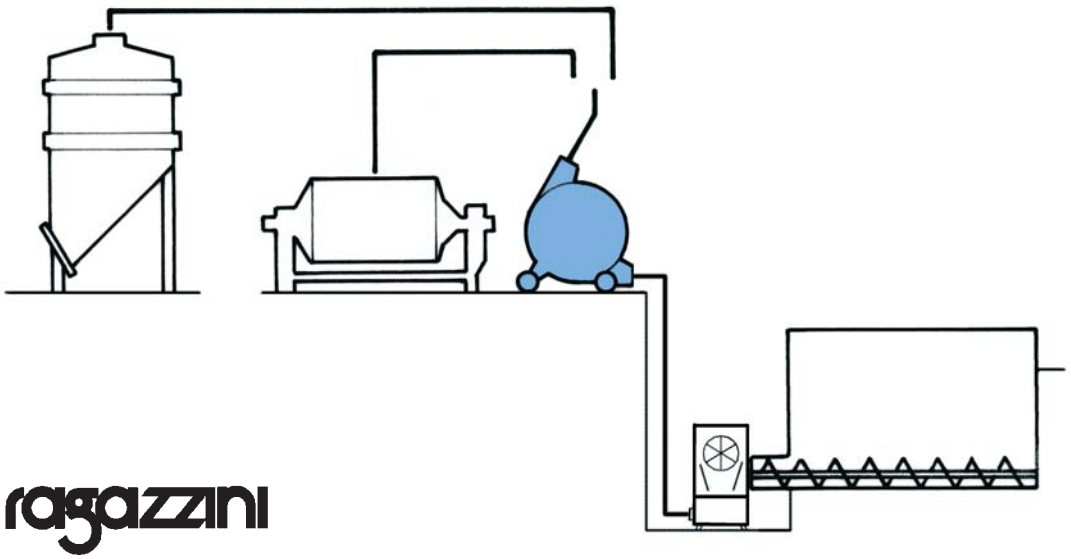
For RED wine processes

- Ideal for pumping over during fermentation with a total control of exposure to oxygen. Oxygen can either be minimized or added if desired.
- The gentle pumping action does not damage solids during pumpovers, which results in superior colour and aromatics qualities.
- Comparisons have shown that when a ROTHO pump is used for the entire RED winemaking cycle there is a considerable reduction (from 20 to 50%) in the quantity of LEES produced compared to other processes.









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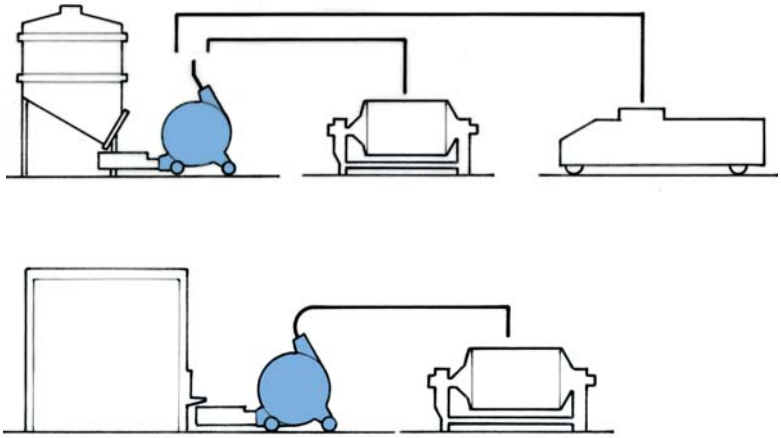
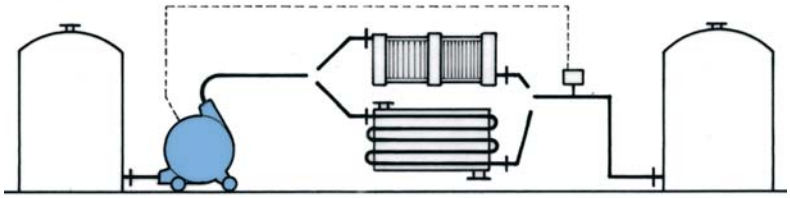
For RED fermented

- The "Delicate" ROTHO treatment of the product without crushing or tearing of the stems and skins results in a decrease in the percentage of LEES of 33% when compared to other systems.
- The gentle ROTHO system does not cause any change in the liquids or solids being pumped-no aeration or contamination.



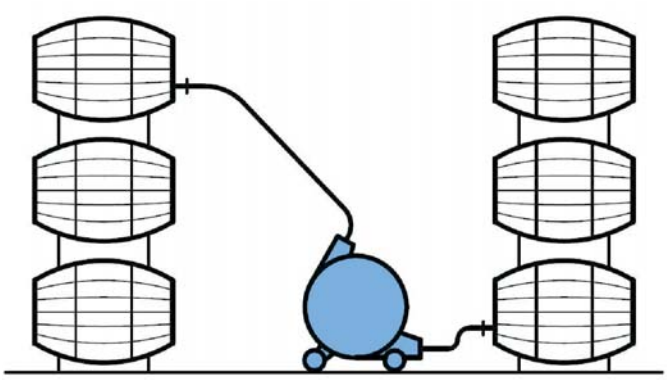
For Feeding Chillers

- Gentle ROTHO pumping action does not cause emulsification, which can change solubility characteristics.
- In addition, when equipped with a variable speed control, the ROTHO pump is able to optimize the thermal exchange and solubility characteristics.
- Gentle ROTHO pumping action does not cause extraction of undesirable tannins, pectins and lignins.



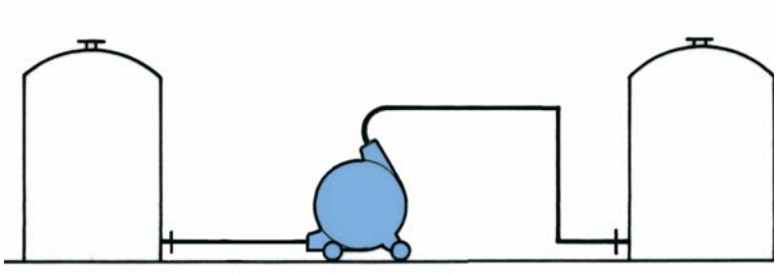
For Barrel Work and Bottling

- Gentle ROTHO pumping action is ideal for feeding a bottling line or filling barrels.
- The complete line of Rotho pumps also includes small pumps for filling and emptying barrels without any foaming, mixing or contamination.



General Pumping Operations

In addition to being the gentlest pumps available, with pumps from Hl/h 2 up to 700, the Rotho pumps offer the highest quality solution for all winery operations **THROUGHOUT THE YEAR.**



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Dosing of Enzymes and Chemicals Products

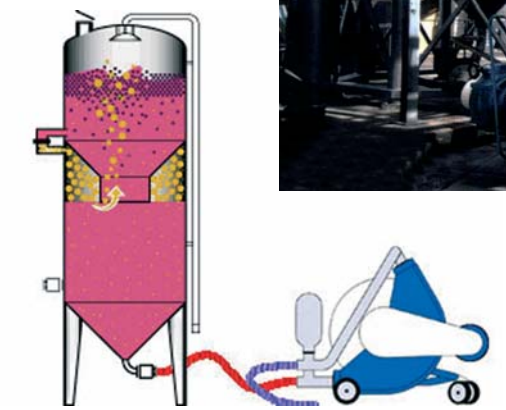
The Rotho pump is able to dose enzymes, bentonite, glycerine, etc. with an accuracy of from 0.5 to 1.0% for very effective wine or must treatment with less maintenance cost due to the Rotho pump's excellent resistance to abrasion.

Dosing of Water Based Sulphurous Anhydride

The Rotho pump can very effectively dose water based sulphurous anhydride with an accuracy of from 0.5 to 1.0% because of its chemical resistance and the positive shutoff of the roller-tube interface. This can be accomplished without any valves and without any off gassing, even when the pump is stopped.

Rotho Application to Ganimede® (www.ganimede.com) Fermenter

The Rotho pumping system is the only one that can rapidly and gently empty the Ganimede type of fermenter without any problems due to plugging caused by seeds or skins and without any damage to the product.



Optionals and accessories

SS fittings

DIN 11851, Garolla, Clamp, Tri-clamp, RJT, SMS, Macon, Spherical

Variable gear speed

Ratio 1-5

Frequency converter

Ratio 1-10

Possible arrangement for analogical signal 4-20mA, 0-10V, etc.

Remote control

By cable and radio for On-Off, speed control and reverse

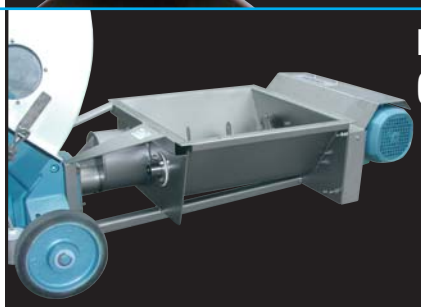
Rotho®

Kit dampeners cleaning

Cleaning system for dampeners by sphere diffuser

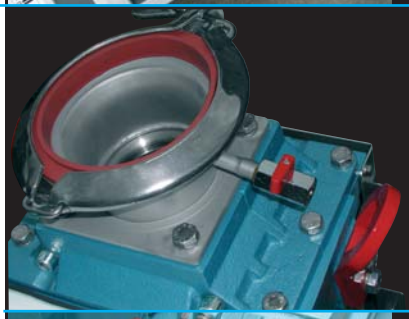
Feeder (hopper)

Removable stainless steel must and pomace hoppers with augers and independent drive motors



Delivery fitting complete of air pressure or nitrogen nipple

All models able to pump red fermented, are equipped of this delivery fitting that permits the injection of compressed air or nitrogen, helping the pump during the job



Leak detector

All range is provided of this device to stop the pump in case of hose failure.

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PSF

Capacity up to 40 Hl/h

MS

Capacity up to 180 Hl/h

SDF

Capacity up to 700 Hl/h

PSF1 PSF1D

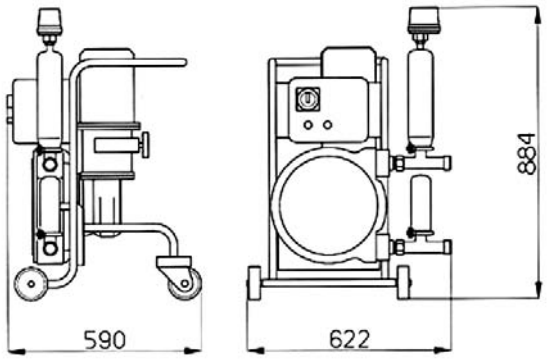
MS1 MS2 MS3 MS2T MS3T

DF90 DF215AB SF90 SF210AB
DF90T DF215TAB SF90T SF210TAB

Rotho®

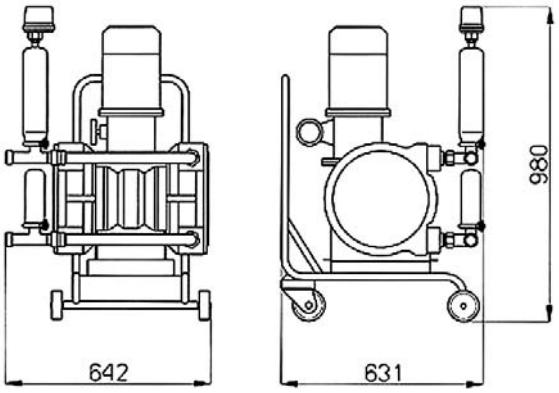
PSF

PSF1



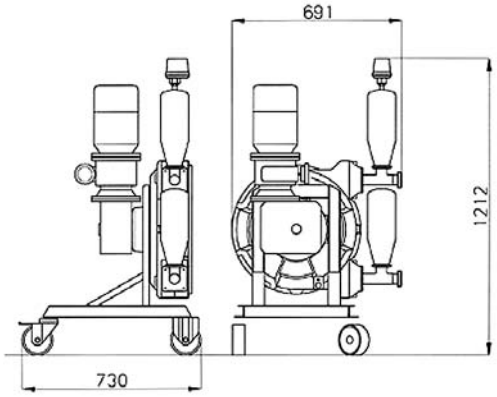
LIQUIDS	
CAPACITY/H at 2,5 BAR	HL 4-20 WITH VARIABLE GEAR SPEED Kw 0,75
	HL 2-20 WITH INVERTER Kw 0,75

PSF1D



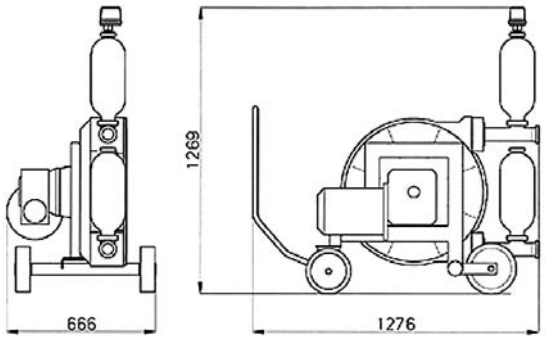
LIQUIDS	
CAPACITY/H at 2,5 BAR	HL 8-40 WITH VARIABLE GEAR SPEED Kw 1,5
	HL 4-40 WITH INVERTER Kw 1,5

MS1



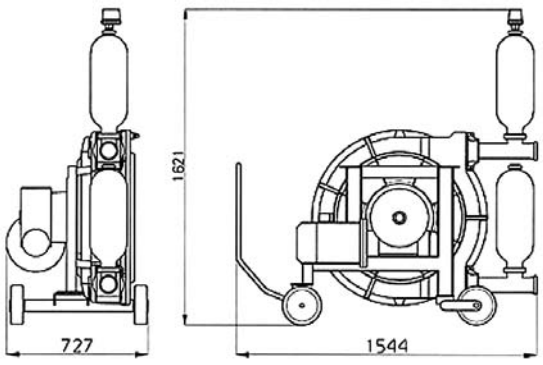
	LIQUIDS
CAPACITY/H at 2,5 BAR	HL 10-50 WITH VARIABLE GEAR SPEED Kw 1,8
	HL 5-50 WITH INVERTER Kw 2,2

MS2



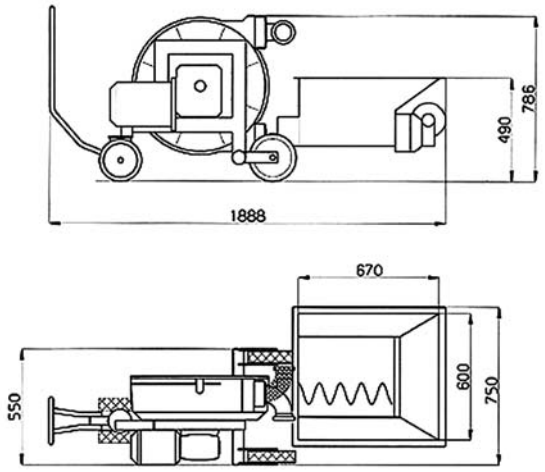
	LIQUIDS	DEST.-CRUSHED
CAPACITY/H at 2,5 BAR	HL 90 WITH MOTOR KW 3	HL 60-70
	HL 18-90 WITH VARIABLE GEAR SPEED Kw 4	
	HL 9-90 WITH INVERTER Kw 4	

MS3



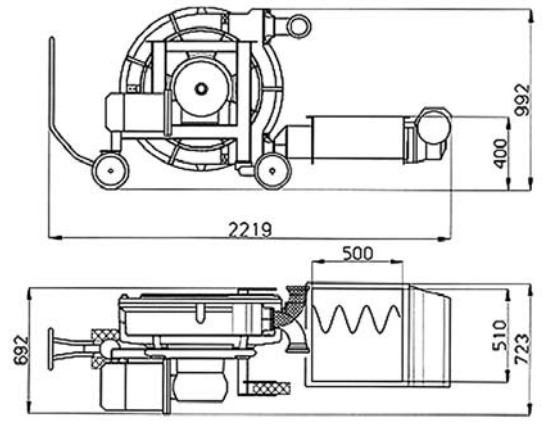
	LIQUIDS	DEST.-CRUSHED
CAPACITY/H at 2,5 BAR	HL 180 WITH MOTOR KW 5,5	HL 120-150
	HL 36-180 WITH VARIABLE GEAR SPEED Kw 5,5	
	HL 18-180 WITH INVERTER Kw 7,5	

MS



MS2T

	RED FERMENTED	WHOLE CLUSTER
CAPACITY/H at 2,5 BAR	KG 3500-4000	-

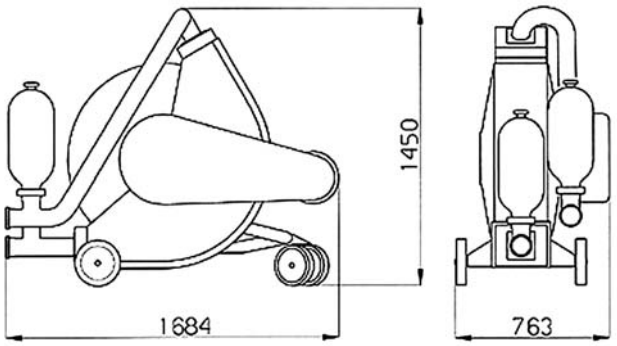


MS3T

	RED FERMENTED	WHOLE CLUSTER
CAPACITY/H at 2,5 BAR	KG 6000-7000	KG 10000

SF210AB

	LIQUIDS	DEST.-CRUSHED
CAPACITY/H at 2,5 BAR	HL 150-300 WITH MOTOR KW 6/5	HL 200-250
	HL 60-300 WITH VARIABLE GEAR SPEED Kw 7,5	
	HL 30-300 WITH INVERTER Kw 7,5	

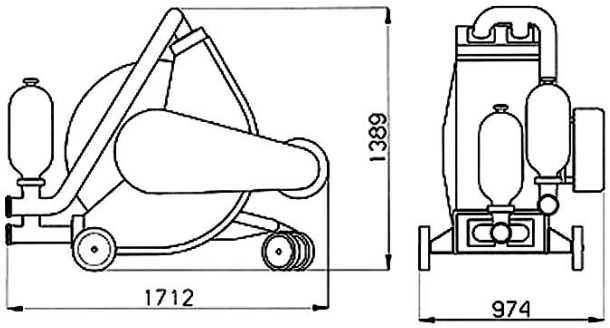


SF90

	LIQUIDS	DEST.-CRUSHED
CAPACITY/H at 2,5 BAR	HL 165-330 WITH MOTOR KW 11/9	HL 250-300
	HL 66-330 WITH VARIABLE GEAR SPEED Kw 9,2	
	HL 33-330 WITH INVERTER Kw 11	

DF215AB

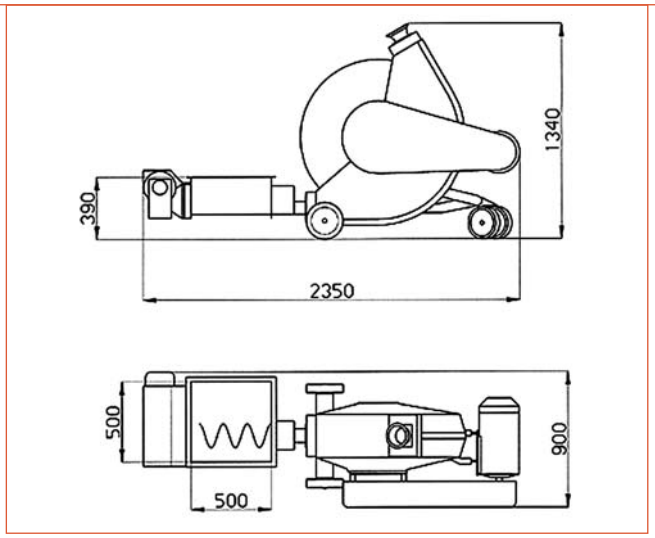
	LIQUIDS	DEST.-CRUSHED
CAPACITY/H at 2,5 BAR	HL 300-600 WITH MOTOR KW 11/9	HL 400-450
	HL 120-600 WITH VARIABLE GEAR SPEED Kw 9,2	
	HL 60-600 WITH INVERTER Kw 11	



DF90

	LIQUIDS	DEST.-CRUSHED
CAPACITY/H at 2,5 BAR	HL 350-700 WITH MOTOR KW 13/11	HL 550-600
	HL 140-700 WITH VARIABLE GEAR SPEED Kw 15	
	HL 70-700 WITH INVERTER Kw 15	

SDF

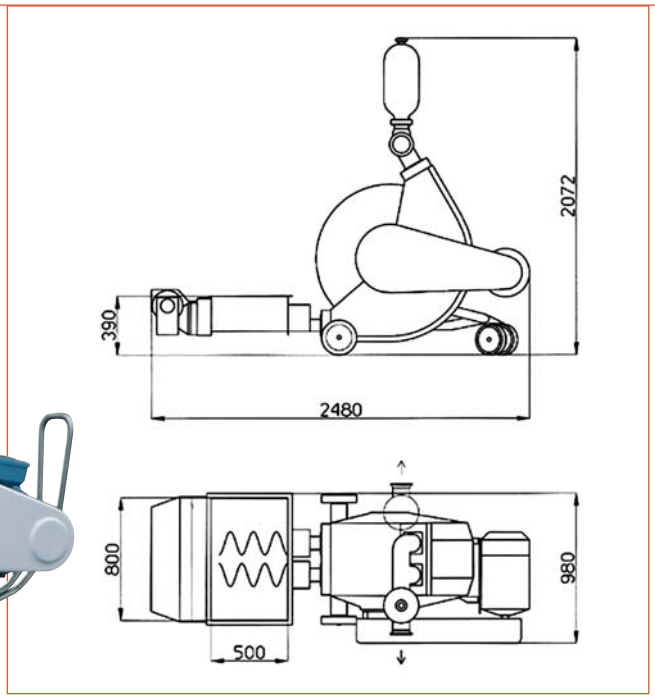


SF210TAB

	RED FERMENTED	WHOLE CLUSTER
CAPACITY/H at 2,5 BAR	KG 10000	KG 15000

SF90T

	RED FERMENTED	WHOLE CLUSTER
CAPACITY/H at 2,5 BAR	KG 12000	KG 18000



DF215TAB

	RED FERMENTED	WHOLE CLUSTER
CAPACITY/H at 2,5 BAR	KG 20000	KG 30000

DF90T

	RED FERMENTED	WHOLE CLUSTER
CAPACITY/H at 2,5 BAR	KG 25000	KG 35000

DF90 DF215AB SF90 SF210AB
DF90T DF215TAB SF90T SF210TAB

10-2005 UK

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