

Application

The WineBrane is an inline management system for accurately measuring dissolved gas concentrations and alcohol removal in wine. The gas management system includes the whole spectrum of oxygen removal and CO₂ addition. This includes O₂ and CO₂ removal in young red wines, the deoxygenation just before bottling or stocking for vinification, refreshing of white and rosé wines with CO₂ during filling or the production of perlé wines. This system can either be installed before a bottling line to adjust gas concentrations of finished wine or between tanks for the transfer to storage tanks. Alcohol removal is made by recirculation in a tank with counter flow of water at the other side of the membrane.

Operating principle

The main component of this skid is a hydrophobic membrane which contains small pores that allow gaseous molecules to pass. Only gases with low molecular weight can pass through the barrier thus the structural properties of the wine remain unchanged avoiding the loss of aromatic components. The wine flows at the outer shell side of hollow fiber membranes where as in the lumen side, a vacuum or CO₂ as a sweep gas, is applied for removal. To directly dissolve gas into the wine CO₂ flows with an overpressure of 0.2 – 0.5 bar and if desired can be added up to the limit of solubility. For alcohol removal, the circuit of water flows in the lumen side of the membrane thus due to the differential concentration of the alcohol in the wine, alcohol passes at the shell through the membrane into the strip water. This operation is less efficient than gas management because of a lower flux rate of the alcohol.



TLS lobe rotor pump

Design and features

The design and construction of the units is performed in compliance with the requirements of the food-processing industry:

- Parts in contact with the product: StSt AISI 316
 - Frame: StSt AISI 304
 - Pumps: lobe rotor pump for wine, centrifugal pump for water
 - Valves: seat valves and butterfly valves
 - Membrane protection: separating membrane pressure gauge
 - Instrumentation: thermometers and pressure gauges with clamp
 - Control panel: StSt AISI 304
 - Membrane: hydrophobic polypropylene membrane with FDA certification
- The design is CIP cleanable (alkaline solution and disinfectants), units can also be sanitised with hot water.



Estampinox EFI centrifugal pump



I Options

The WineBrane exists in several sizes with both manual and automatic unit available, in flow rates of 2500, 5000, 10000, and 2000 L/h for gas management with the largest unit only available fully automated.

For alcohol removal, units are available from 3.8 L/h to 38 L/h with corresponding temperatures of 20 to 25 °C (special skids for larger alcohol removal with higher rates are available upon request). Automated units are provided with a touch screen panel to control and display the production process and a PLC that controls and manages the adjustments (PID adjustment loops).

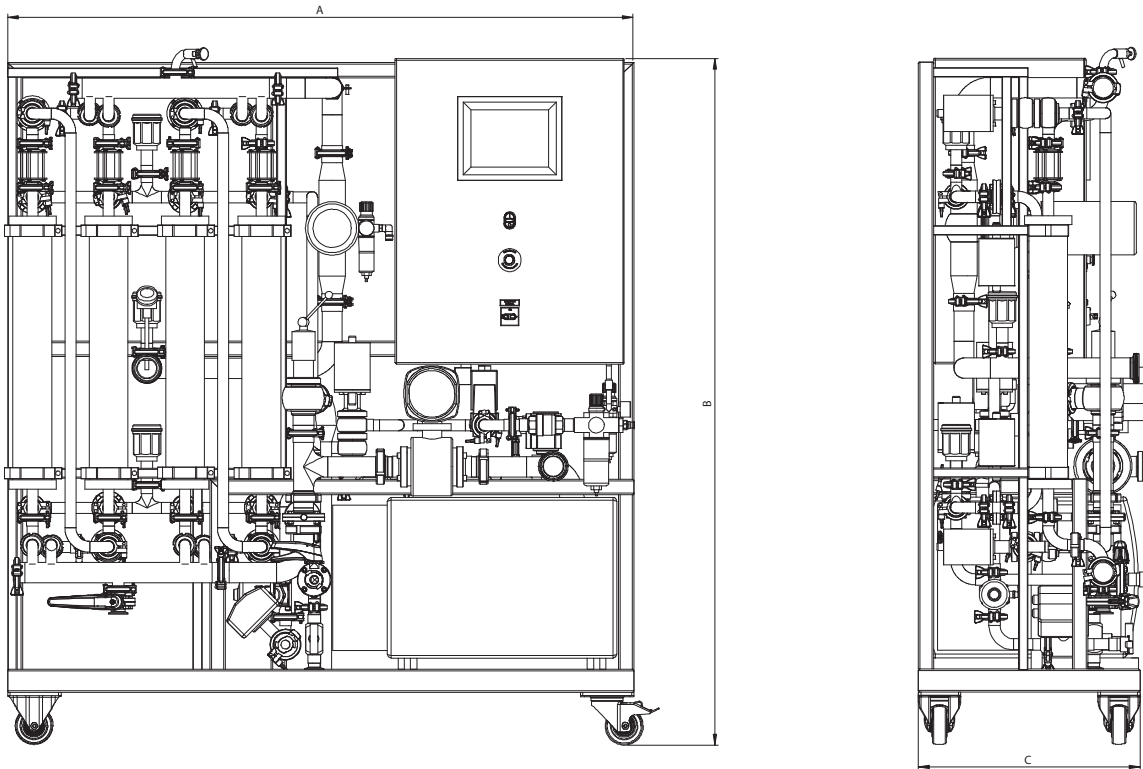
Every unit is provided with all the necessary instrumentation for measuring and control. Items include flow meters, temperature sensors, and pressure transducers. For fully automated units, CO₂ analyzers, proportional valves (valve regulating gas entry) and valve actuators can be equipped.

As an option an in-line O₂ and alcohol analyzer can be equipped to display these values on the touch screen panel.

I Technical specifications

Max. wine flow gas management	20 m ³ /h	88 US GPM
Max. wine flow alcohol removal	5 m ³ /h	22 US GPM
Max. operation pressure	5 bar	72 PSI
Operating temperature	1 °C to 40 °C	34 °F to 105 °F
Max. Soda sanitation temperature	85 °C	185 °F

I General dimensions



WineBrane	A	B	C
2500 l/h	1550	1800	600
5000 l/h	1650	1800	720
10000 l/h	1650	1800	720
20000 l/h	2000	1900	800

* Dimensions in mm



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