AEB ENGINEERING

STABYMATIC

AUTOMATIC CATIONIC EXCHANGE SYSTEM FOR pH LOWERING AND TARTARIC STABILIZATION

BENEFITS

- SEPARATED PIPE LINES FOR WINE AND REGENERANTS
- EASY RESIN REPLACEMENT AND COLUMN SPARGER
- POSSIBILITY OF USING THE SAME COLUMNS FOR BOTH WHITE AND RED WINES THANKS TO WHITENING CYCLES
- AUTOMATIC, SEMI-AUTOMATIC AND MANUAL SETTING MODES
- WATER SAVING THANKS TO THE TANK OF RECIRCULATION

Stabymatic is a revolutionary system for **pH lowering** and **tartaric stability** based on the use of **pH-Stab 2.0**, which reduces K^+ and Ca^{++} in wine and makes it stable.
The decrease in mineral ions contributes to the lowering of the pH in treated musts or wines. Ion exchange resins are obtained by a Styrene and Divinylbenzene polymerisation process at high temperatures - with a specific AEB formulation - with active sulphonic groups, which provide higher chemical-physical stability and a gel structure that does not permit absorption of organic substances.
This equipment can work in three modes: automatic, semi-automatic or manual.

Tartaric stabilization using resins is achieved by removing electropositive ions. The liquid flow rate passes through columns containing **pH-Stab 2.0**, exchanging cations and reducing wine conductivity, which leads to a lowering of the pH. **PH-Stab 2.0** retains cations by exchanging H^+ ions: the regeneration is therefore carried out with **Acid+**, a sulphuric acid and special surfactants-based activator that restores the resin to its acidic form, keeping intact the characteristics of the polymer.
The system is designed to have the minimum organoleptic impact on treated musts or wines. The type of resin used, the liquid flows and the oenological pumps employed guarantee a high-quality product. Tests have shown there is no interaction with SO_2 in the entire process. The process is optimized by AEB with perfect design ratio between height and diameter of the column with the diameter of the resin spheres, maximizing effectiveness of **pH-Stab 2.0** even at high turbidity levels. In order to optimise the use of the **Acid+** regenerant, the machine is equipped with a system of accumulation that is used for the preparation of the solution and the consequent recirculation of the same in the columns. The system guarantees a complete recharge without wasting product, as is often happens in other systems. The machine is equipped with a closed system that is used for the exchange of the wine

and recirculation of the regenerative solution, in order to be able to operate in continuous manner (one column exchanges, the other regenerates).
The machine is equipped with a closed system that is used for in-must/wine exchange, enabling treatment in the most extreme conditions.
An **automatic alkaline wash**, **where the exchange performance of pH-Stab 2.0** is reduced, allows the resin to return to its original state by removing any organic substances that may have accumulated on the spheres.
The special **pH-Stab 2.0** formula allows easy transition from red wine to white wine using a specially programmed bleaching procedure, with a simple input by the operator.

FEATURES AND BENEFITS

- Separate line for wine and regenerants
- Backwash and inflow regeneration
- Special stainless steel columns
- **Easy replacement** of resins
- **Easy maintenance** of diffuser column
- Use of sulphuric acid products for regeneration
- Oenological pumps for wine handling
- **The same columns can be used** (pH-Stab 2.0) **both red and white wines** thanks to a bleaching cycle (Peracid)
- **Automatic, semi-automatic or manual operation**
- **Limited water consumption** thanks to recirculation tank
- Exchange possible with high NTU levels
- **Treatment possible in all stages of production**
- Both nitrogen or air can be used for emptying
- Processing can be scheduled **by both target pH or volume**

OPERATION

Stabymatic can work in 3 modes: automatic, semi-automatic or manual.

AUTOMATIC MODE	The machine operates automatically, both in the exchange and in the regeneration. By setting the target pH or the volume in litres to be treated, **Stabymatic** operates by alternating regeneration and exchange cycles until it has reached the set parameter. Other available options are the exchange flow rate and the quantity of wine you want to use to prime the resins.
SEMI-AUTOMATIC MODE	**THE SYSTEM ALLOWS TO SELECT THE REQUIRED FUNCTION:** ● H_2O storage loading ● Storage recirculation ● H_2O/Regen. column drain with nitrogen ● Column rinse with H_2O ● Wine drain with nitrogen ● Wine tube rinsing with H_2O ● Column filling with H_2O ● Direct storage draining
MANUAL MODE	By using the touch screen, individual procedures can be done of special cycles that allow more efficient operation of the pH-Stab 2.0. Stabymatic permits operation with varying flows in order to adapt to the type of wine must and to winery requirements.

TECHNICAL CHARACTERISTICS

The equipment consists of the following components:

- A stainless steel box tube frame on feet.
- Two columns consisting of 4 half-columns complete with spoked diffusers at the end, connected by a central flange using nuts and bolts. The columns may be inspected at the top and bottom by means of DIN 150 plugs including mechanical safety valves.
- A storage tank on feet with transparent PVC cover, equipped with floats for overflow, full drainage and regenerant dosing

SYSTEM

- Simple, single-acting, two-way pneumatic valves with magnetic safety device and indicator light, three-way valves with magnetic safety device and indicator light.
- Manual ball valves with safety lock (wine inlet, wine outlet, and regenerant drain), and additional valve on wine mixing kit.
- Turbine and electromagnetic flow meters
- Digital pressure switches
- Electronic flow detectors
- Two pH electrodes (inlet and outlet)
- Temperature probes PT100
- AISI 316 stainless steel tubing
- Sampling hatch (wine line inlet and outlet)
- Solenoid valves (for air/nitrogen supply management) electro-pneumatic valve and pump control unit
- Pressure regulator
- Air pressure indicator

PUMPS

- Exchange-wine pump with EPDM impeller, regulated by inverter
- Regeneration pump with impeller in EPDM and special seals
- Rinse pump with impeller in natural rubber, regulated by inverter
- Pneumatic pumps for Acid+, Alca- and Peracid regenerators.

ELECTRICAL PANEL

The electrical panel in stainless steel contains the following components:

- Main switch
- Emergency stop button
- Enable button
- Alarm silence button
- Alarm buzzer
- Motor circuit breakers
- 10.4” touch screen
- Mitsubishi PLC
- Modem for Internet connection via LAN
- Inverter
- pH-meters

SUPPLIED ACCESSORIES

- Funnel for resin loading
- Neutralisation kit: includes the addition of a pneumatic pump for Alca- dosing directly into the drain line when emptying acid regenerant solutions.

OPTIONAL EXTRAS AVAILABLE ON REQUEST

- Water division kit: includes an additional inlet for mains water, protected by a pneumatic valve. The standard inlet present on the equipment is only to be used for demineralised, osmosis water. Programme for the automatic management of the two types of water according to the needs of the equipment.
- Stainless steel frame filter including 20” housing and 150 micron filter cartridges.
- Wastewater separation kit: includes an additional valve at the outlet, which uses software to separate acidic wastewater from rinses. Great savings can be had in that the disposal of waste acids is considerably reduced, resulting in great savings.

RANGE

MODELS IN THE STABYMATIC RANGE INCLUDE THE FOLLOWING:

LINE	MODELS
STABYMATIC LINE Automatic models	**STABYMATIC 500** up to 30 hL/h **STABYMATIC 500 SINGLE-COLUMN (AUTOMATIC)** up to 60 hL/h (discontinuous) **STABYMATIC 1000** up to 60 hL/h **STABYMATIC 1000 AUTO GF** up to 60 hL/h **STABYMATIC 2000** up to 120 hL/h
STABYMATIC ECO LINE Semi-automatic and manual models	**STABYMATIC 30 ECO LINE** up to 3 hL/h **STABYMATIC 50+50 ECO C** up to 6 hL/h **STABYMATIC 100 ECO E** up to 13 hL/h **STABYMATIC 200 ECO C** up to 25 hL/h **STABYMATIC 500 ECO C** up to 60 hL/h

For detailed information on each model, refer to the relevant technical data sheet.

RANGE

STABYMATIC 30 ECO

STABYMATIC 50+50
ECO C

STABYMATIC 100 ECO E

STABYMATIC 200 ECO C

STABYMATIC 500
SINGLE-COLUMN
(AUTOMATIC)

STABYMATIC 1000
AUTO GF

COMPONENTS

REGENERANT PUMP WITH PRESSURE SWITCH AND PNEUMATIC VALVE

Automatic regenerant management with valve to prevent liquid backflow to tank.
The flow sensor indicates absence of liquid.

INLET/OUTLET FOR RESIN LOADING AND UNLOADING AND DIFFUSER INSPECTION

Easy access to diffusers and resin loading/ unloading.

pH NEUTRALIZATION KIT

Dosing system for acid regenerant neutralization solution.

COMPONENTS

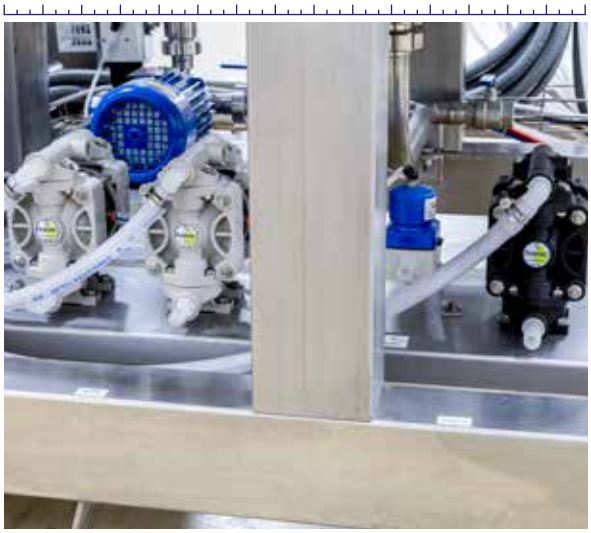
FLOW METER

DEDICATED PUMPS

INLETS AND OUTLETS

SEPARATE PUMPS

For managing washing, regeneration and wine supply: the system allows one column to regenerate while the other column is exchanging. Pumps with EPDM impeller to safeguard the quality of the treated wine.



REGENERANT DOSING PUMPS WITH SAFETY VALVES

Pneumatic valves for detergent supply for the system.

FLOW SENSORS

Enable automatic system management.

RECOMMENDED PRODUCTS

PH-STAB 2.0

ACID+

ALCA-

PERACID

X-WASH

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