

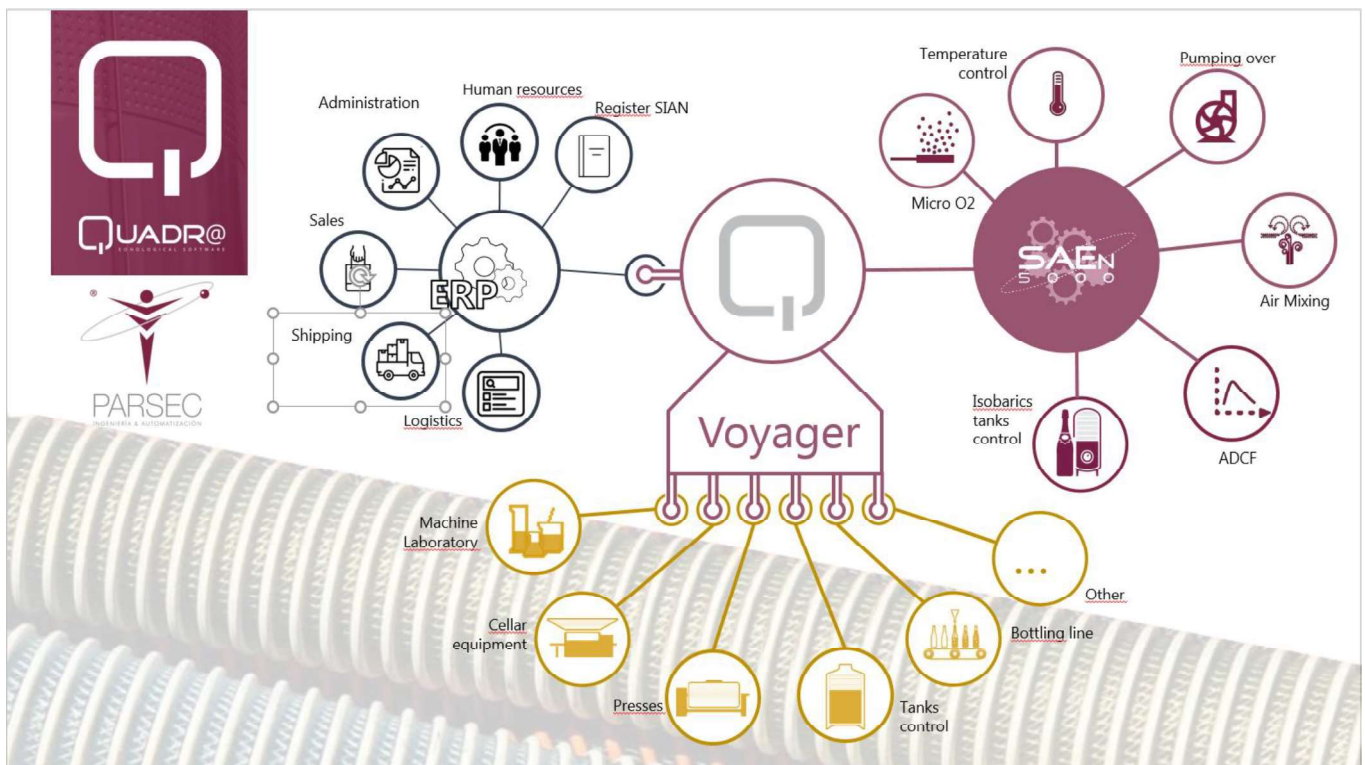
# Parsec: Innovation to the service of oenology

*Since 1995 Parsec has been pioneering the automation of processes in oenology, designing and manufacturing award winning solutions as well as delivering turnkey projects dedicated to the winemaking industry.*

Parsec specialises in the design, creation and turnkey delivery of plants, equipment and integrated control systems for wine production and aging. From the very beginning, Parsec has offered its experience to improve the quality of the wines and the working environments in the cellar. The continuous investment in Research and Development projects allows Parsec to create innovative oenological processes and advanced automation systems for modern wineries.

Integration, accuracy and control are the strengths of the Parsec systems, able to generate responses that stand out thanks to their applicative power and reliability.

This is why wine producers and wineries all over the world have entrusted Parsec with the design and development of the management, automation and control systems in their cellars.



# SAEn4000 – Micro/macro-oxygenator

## Standard Dosage

### *Outstanding and innovative features:*

At the heart of the system is **the central control unit**. Equipped with LCD display and dedicated keyboard, it allows for the management of up to 15 independently and programmable outputs depending on the model.

For each output, it is possible to programme all the various means of oxygen dosage used in the various oenological applications:

- |  |                                |
|--|--------------------------------|
| <input type="checkbox"/> Micro-oxygenation | <i>continuous (mg/l/month)</i> |
| <input type="checkbox"/> Micro-oxygenation | <i>timed (mg/l/month)</i>      |
| <input type="checkbox"/> Macro-oxygenation | <i>continuous (mg/l/day)</i>   |
| <input type="checkbox"/> Macro-oxygenation | <i>timed (mg/l/month)</i>      |
| <input type="checkbox"/> Dosage in mg/l    | <i>from 0.1 mg to 6 mg</i>     |
| <input type="checkbox"/> Adjustable volume | <i>from 10 hl to 500 hl.</i>   |

It is possible to configure **independently on each output**, micro- or macro-oxygenation:

- Dose for and volume of the wine to micro-oxygenate
- Timers and automatic deactivation of the dosage after the pre-set hours/days

Other important characteristics:

- Ease of use
- Continuous control and off-setting of the status of the diffusion cartridge and of any errors in supply pressure.
- No need** for compressed air in order to operate

*For all models, the Parsec quality **is always guaranteed**: micro-oxygenation with slow and constant oxygen release, precision and repeatability of the dosage, continuous monitoring of the system and error detection (clogged cartridge, pressure errors, etc.), today considered the best equipment on the market.*

## **The requirements...**

The essential characteristics that an oenologist asks of micro-oxygenation equipment are essentially:

### ➤ **Reliability of the dosage**

In other words, the surety that the machine will dispense the quantity of oxygen that the oenologist has decided to release into the wine being handled. This surety can occur only whereby the machine is able to control the exact quantity of oxygen released. But that's not all. In fact, it is also necessary for the temperature of the wine/must being treated to be within an adequate range (15°-25°C). Whereby this is not the case, the absorption capacity of the wine/must is altered and may result in setbacks, such as an uncontrolled delayed absorption and other similar phenomena.

### ➤ **The slow and continuous release of oxygen**

The release of the oxygen dose in a mild and continuous manner, without any violent influx that could oxidise the wine/must being treated in the area surrounding the cartridge and beyond. Often, a consistent influx can lead to a dangerous accumulation of oxygen above the surface level that could act as an uncontrolled oxidation of the must/wine in the case of pump overs or some other operation of movement of the wine.

### ➤ **The precision and the repeatability of the dose**

When you set the amount of gas to be released inside a tank, a basin or a barrel, especially for a potentially-risky gas like oxygen, maximum surety is required that the quantity actually supplied is correct, precise and, above all, repeatable. There are devices on the market that even measure the dose of oxygen by volume (millilitres), without taking into consideration that for a gas, the unit of measure by volume is not of significance. A litre of gas can signify an extremely small quantity (at a low pressure and/or high temperature) or an enormous amount (at a high pressure and/or low temperature). The normalised unit of measure, for a gas can be expressed in litres if a precise pressure and a precise temperature is specified. Generally, micro-oxygenation equipment is powered by one cylinder and the pressure-reducing valves used to regulate the outlet pressure to the pressure of utilisation are generally inaccurate and generate a variable release force.

### ➤ **Various dosage modalities at your disposal in one single device.**

In accordance with the oenological outcome one wishes to obtain or the current operational phase (refinement, fermentation, etc.), it is necessary to operate *different modes of dosage*:

#### ✓ **Micro-oxygenation:**

- To prolong the refinement on noble lees of high-quality wines without the production of unwanted sulphation substances.
- To obtain a superior stabilisation of colouring matter thanks to a greater speed of polymerisation.
- To obtain a higher degree of phenolic maturity thanks to the polymerisation process of the harder tannins, softer and sweeter wines from a gustatory point of view.
- To store wines in tanks of stainless steel (or other food-grade inert material), preventing reduction phenomena.
- To accelerate the phenolic maturation (ellagitannins) of wines that, having terminated the refinement in wood, must be prepared for bottling.

- ❑ To reproduce in a tank of inert material the same conditions of light oxygenation that occur in wines matured in wooden barrels, possibly in combination with modern refinement technologies (e.g. INSERSTAVES - oak planks inserted into the tank).

✓ **Macro-oxygenation:**

- ❑ To improve the colourant intensity of the wine produced.
  - ❑ To render the colour stable to the catalysing action of the oxygen in the polymerisation reactions of the polyphenols.
  - ❑ As an aid to the multiplication of the yeasts. In the final phase of fermentation, the yeasts (which require a consistent quantity of oxygen for their multiplication) are found in a medium saturated with carbon dioxide. With macro-oxygenation, this lacking is compensated for, allowing for the attainment of wines with more ample and crisp perfumes.
-

## **The proposals:**

To meet all these requirements, Parsec has created a complete range of devices with the characteristics suitable for satisfying all your needs concerning micro-oxygenation and the system of temperature monitoring and control.

### **Micro-oxygenation:**

*(General characteristics common to all Parsec models)*

#### ➤ **Computerised system with dedicated internal software and microprocessor.**

The unit is equipped with:

- ✓ a central microprocessor
- ✓ a specially designed electronic system
- ✓ sophisticated software internally within the device
- ✓ a revolutionary *mechanical solution* for **slow and continuous oxygen dosage**.

All this allows us to keep under control all parameters at play:

- ✓ pressure
- ✓ temperature
- ✓ volume
- ✓ height of the tank
- ✓ entry pressure
- ✓ exit pressure
- ✓ other parameters involved in the control of the process

Thus, it is to obtain **real and precise control of the** dosage of oxygen released. In this way, extraordinary precision and repeatability of the dosage is achieved.

#### ➤ **Continuous dosage of the oxygen**

A sophisticated electronic system combined with an ingenious mechanical solution allow for the attainment of a **precise dosage and a continuous release of the oxygen**. All studies undertaken to date have demonstrated the need for the release of oxygen to be both slow and continuous. *Consistent insufflation effectuated at pre-set intervals of time often does not bring about the desired results and, indeed, may even be damaging.*

#### ➤ **Ease of use and reliability**

In addition to the benefits specified above, the sophistication within the device has allowed for the attainment of a considerable simplification in the means of utilisation.

The end user need only concern themselves with setting:

- ✓ the Volume of the tank
- ✓ the dose of oxygen one wants to be released in the most simple and immediate means possible (*dedicated keyboard*).
- ✓ The type of oxygenation that one wants to effectuate (*micro-/macro-oxygenation and single dose*)

The microprocessor within the machine takes care of all the rest.

### ➤ **Setting the Dose in mg/l.**

When administrating a gas, it is essential to set the release dose by weight. Other types of measuring are not significant.

*For example, dosing a gas by volume (ml) has no meaning since the amount of gas is not determined in a given volume. One must consider any indeterminacy or even a single variation in pressure or temperature, for example:*

- ✓ tank height
- ✓ atmospheric temperature and pressure
- ✓ entry pressure of supply
- ✓ clogging of the inlet diffuser
- ✓ and other parameters

These all render the dosage in volume virtually uncertain. The precision of the dosage is not influenced by the more or less scarce precision of the supply pressure emanating from the cylinder. In the case whereby the pressure is outside the optimum range, however, the error in supply pressure is indicated.

### ➤ **Clogged diffuser detection and compensation.**

The machine is equipped with an electronic system of clogged diffuser revelation. In the event that the diffuser were to become obstructed, the machine would set off an alarm and the internal pressure would be automatically compensated for.

### ➤ **Detection and compensation**

The machine is equipped with an electronic system for the detection of and compensation for the parameters of gas temperature, tank height and inlet pressure.

➤ ***Setting the tank volume***

Via the keyboard, it is possible to select the volume of the tank from 10 hl to 500 hl.

➤ ***Micro/Macro Setting.***

For each tank independently, it is possible to set to work in Micro- or in Macro-oxygenation.

➤ ***Timer for automatic shut-off of the dosage***

Through the control panel, it is possible to set for each output the time of duration for the oxygenation.

➤ ***Auto-diagnostics***

For your security, this equipment is equipped with a system for the automatic detection of any eventual anomalies and any eventual errors in inlet pressure. Should any problems or faults occur that could significantly alter the dosing precision, the machine automatically stops and signals the error.

The unit, in addition to its capacity for revealing the state of clogging in the cartridge, whereby necessary **signals the need to effectuate cleaning of the cartridge.**

➤ ***Container: stainless steel IP65 casing***

All the materials utilised internally and externally allow for a secure usage of the equipment within the common locations of operation (cellars, technical rooms, etc.). The IP65 protection ensures the trouble-free utilisation of the equipment, even under critical conditions.