



Dosing of aqueous sulphur dioxide solutions.



Introduction

Sulphur dioxide (SO_2) is an essential tool in winemaking and wine preservation. The appropriate use of SO_2 produces wines which are less oxidised, with improved colour and aroma and lower volatile acidity, as a result of its effect as an:

→**Antioxidant:** with reducing properties which protect from oxidation reactions.

→**Antioxidasic:** inhibiting the action of oxidase enzymes.

→**Antimicrobial:** exerts an inhibiting activity on yeasts, lactic acid bacteria and acetic acid bacteria.

SO_2 dosing is an important process requiring the use of simple, versatile and precise equipment.

Characteristics

PYXIS is a new concept of dosing equipment for aqueous SO_2 solutions.

The equipment is on a mobile structure which makes it easy to incorporate into the grape processing line.

The product, whether it's **Sulfamol** (ammonium bisulphite) or **Sulphur** (potassium hydrogen sulphite), is dosed through the pipe in the pulp pump or on the Monho pump hopper.

The number of dosing pumps required and their power will vary according to the products or lines being dosed and the dose used according to the must flow rate or the grape pulp. Between one and four dosing pumps can be installed on the equipment at the user's discretion.

The unit has a touch-screen which makes programming very simple. The user must provide:

- The operating dose
- The pump flow rate (in hl/h or kg/h)
- The product to be dosed (Sulfamol 640, Sulphur 18, Sulphur 15, etc.).
- The SO_2 dose to be used (in g/hl)

Using these variables, the unit adjusts the product operating flow rate in order to supply the precise dose required.

If the product being dosed runs out, an audible alarm system will immediately warn the user.

The equipment can be easily and quickly connected to the product being dosed through food-grade fittings adapted to each winery's needs.

Dosing pump

Dosing is done through a high precision electromechanical piston pump with a stainless steel body resistant to corrosion. The pump complies with the following equipment directives:

- Directive 2006/42/EC-MAC on Machinery.
- Directive 2014/30/UE-EMC on Electromagnetic compatibility.
- 2011/65/UE-ROHS of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

The electromechanical pumps, including all their spare parts and accessories, are manufactured in compliance with Directive 2011/65/EU, Annex II.

Structural features

- All its structural components are manufactured in AISI-304 stainless steel.
- It is a fully automatic and stand-alone unit.
- Quick and easy connection to and disconnection from the pipe in the pulp pump or on the Monho pump hopper.
- Light and easy to move.
- More sensitive elements are protected from impact and environmental agents. IP 65.
- Dose and product totaliser.
- Continuous dosage selector.
- Table summarising the equipment status.
- Alarm system in case of depletion of product being dosed.
- Food-grade fittings.
- Operating voltage: 230 V.
- Power consumption: \approx 500 W.
- Weight: 80 kg.
- Dimensions: 140 cm x 160 cm x 60 cm (height x width x depth).

Operating mode

Dosing in pipe or during unloading process:

Direct injection of the pure product (Sulfamol or Sulphur) into the pulp pump or during the unloading process before crushing renders a quick homogenisation of the decanted product and of the SO₂.

The equipment performs the calculations required for its correct operation. The user only has to programme the operating variables.

The unit is connected to the motor contactor (either the pump or the auger) and will switch on/off when the motor contactor does.



Image: Pyxis dosing pump.