

Drying and thermosetting stenters : Automation & Upgrade



We supply *full dyeing and thermosetting stenters* with the state of the art control technologies:

☒ Our *drying and thermosetting ranges* are composed by:

- *“J” type scray* with digitally controlled fabric tension compensator.
- *Fabric entry* passage, high type, with *“FLUO” guiders*.
- Squeezing and impregnation *padding mangle*.
- *Pneumatic fabric tension compensator* with digital control.
- *Drying and thermosetting full range*.
- Fabric winder with fabric tension control by means of one *load cell*.
- *“Floating” pneumatical control* of the pressure of the winder in the A-frame.

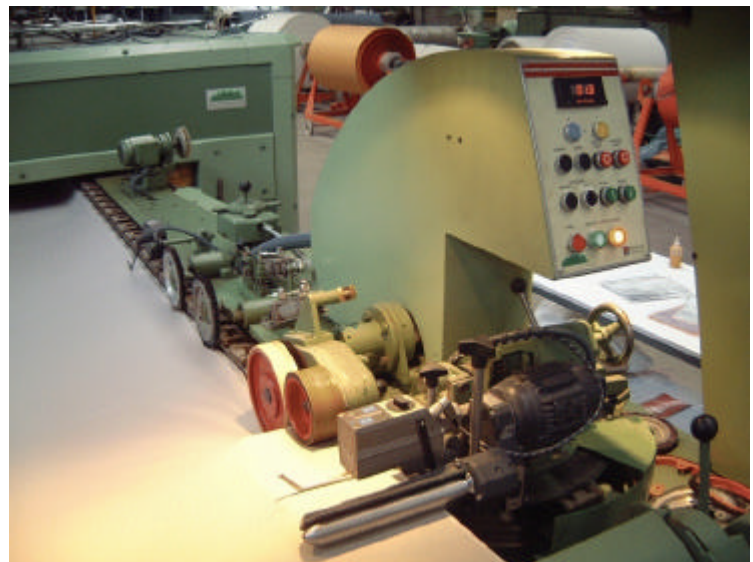
Drying and thermosetting stenters : Automation & Upgrade



Drying and thermosetting unit 7 chambers



"J" type scray fabric accumulator
with auto feeding compensator



Automatic fabric overfeeding

Drying and thermosetting stenters : Automation & Upgrade



Main tactile screen to control all the stenter parameters



Fabric exit side with the secondary tactile screen for winder control

Drying and thermosetting stenters : Automation & Upgrade



The driving of all the machine's parameters is done with our specific software **AUTORAME V1.0** in the main tactile screen located at the operator's passage.

Four main parts form the software **AUTORAME V1.0**:



Main tactile screen with AUTORAME V1.0. control programme

1.- MAIN CONTROL OF THE DRYING AND THERMOSETTING STENTER

From the main tactile screen we access to the different parameters of the machine.

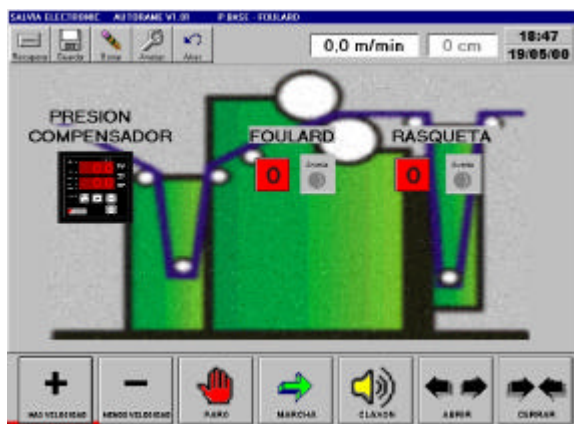
Drying and thermosetting stenters : Automation & Upgrade



Main control screen



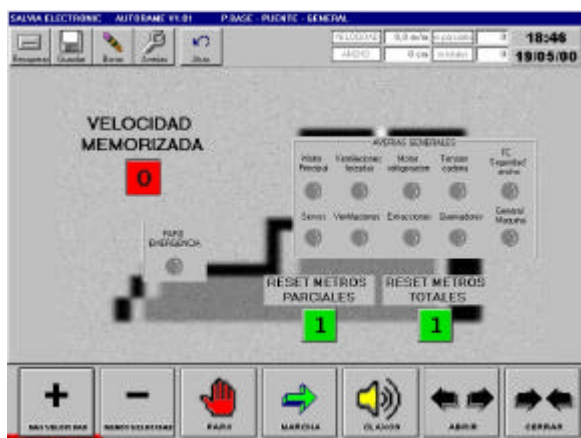
Fabric feeding and scray control screen



Padder control screen



Fabric feeding accessories control screen

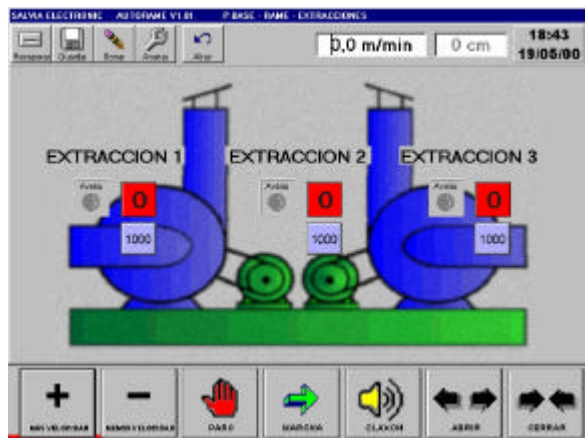


Electronical devices control screen



Drying chamber parameters control screen

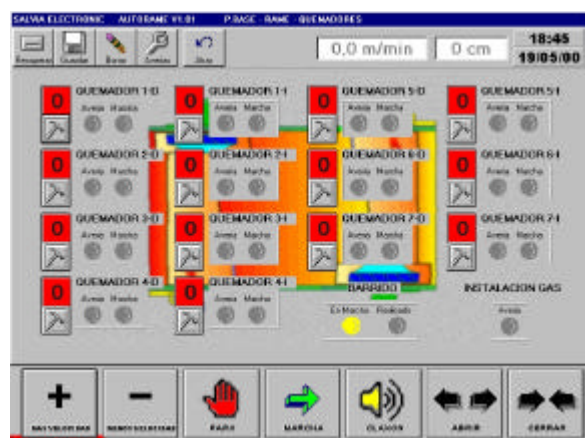
Drying and thermosetting stenters : Automation & Upgrade



Exhaust fans control screen



Chamber's blowers control screen



Burners control screen



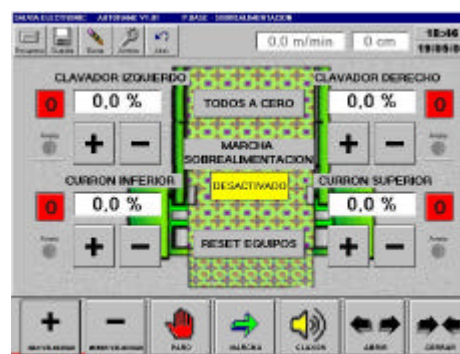
Temperature control screen

2.- A.O.F. FABRIC OVERFEEDING DIGITAL CONTROL

We digitally control the fabric overfeeding with an accurate control of the overfeeding percentage.

☒ The software *controls two speeds*:

- Fabric *thermosetting speed control*.
- Fabric *drying speed control*.



Overfeeding control screen

2.1.- THERMOSETTING FABRIC SPEED CONTROL

We control the thermosetting process by means of the control of the two main parameters: The **thermosetting temperature** and the **thermosetting time** according with the thermal efficiency of the stenter and the kind of fabric to be processed. Once the parameters have been introduced, then the software calculates the optimum fabric speed allowing to fix the thermosetting time in the best option.

The optical fibre type temperature sensors generates the graphic showing the real temperature inside each chamber and showing where the fabric reaches the scheduled thermosetting temperature and the chambers where the fabric is thermosetted.

2.2.- DRYING FABRIC SPEED CONTROL

The scheduled **drying temperature** and the chambers where the fabric should be dried are the parameters to be introduced in the tactile main screen to control the fabric drying.

3.- I.T.C. (Temperature Intelligent Control)

One **optical fibre type temperature sensors inside each chamber check the real fabric temperature** in each chamber and allow us to know the real fabric temperature at any part of the stenter.

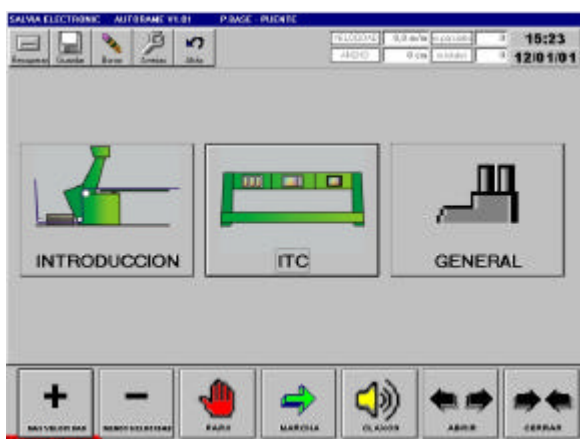
The maintenance and cleaning of the sensors is done very quick and very easy allowing a long working life of the sensors and a very reliable temperature control.

Drying and thermosetting stenters : Automation & Upgrade



The temperature control is the main parameter to reach the optimal efficiency in the stenter.

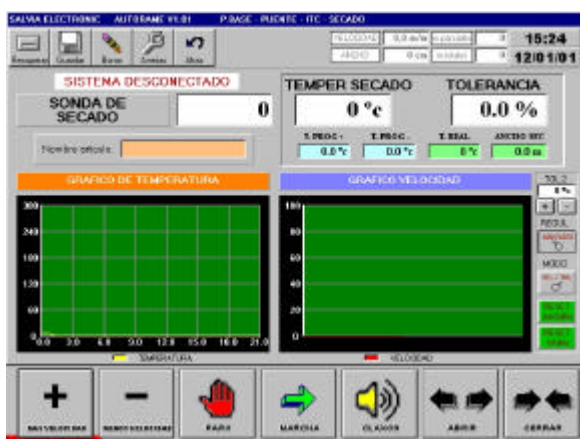
Then we may improve the fabric speed, the fabric final quality and the repeatability of the process batch by batch.



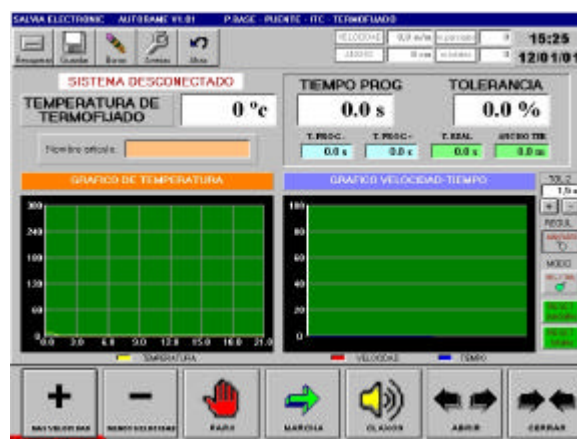
Drying chamber control screen



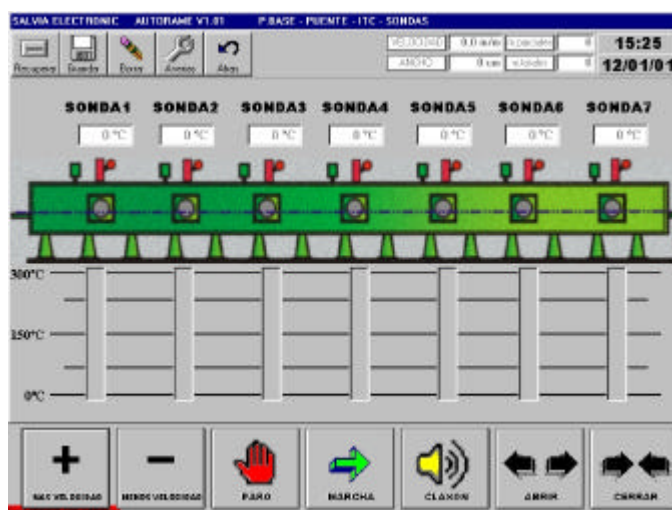
Thermosetting and drying screen



Drying process control screen



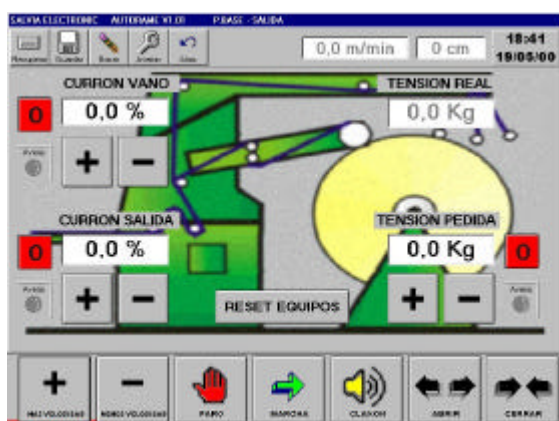
Thermosetting process control screen



Screen showing the fabric temperature at each chamber

4.- WINDING CONTROL WITH LOAD CELL

We optimise the control of the winding tension by means of one load cell checking on real time the fabric tension.



Load Cell winding control screen



Winding system by charge cell