

Loris Bellini: Innovation for yarn package dyeing ROBODYE 2000

Loris Bellini has always been in the front line in the race for innovation. Whatever the dyeing needs of the customer, Loris Bellini can propose proven technical solutions and offer demonstrations. The quality of Loris Bellini products has been appreciated since 1949. Maximum reliability, large component size, high quality materials, technology and duration are the characteristics taken for granted by customers.

Integrated robotized installation for dyeing hydro-extraction and drying of yarn in bobbins

ROBODYE 2000 is designed for fully automatic functioning, without the need for human intervention. The guiding idea in the system was to realize a line receiving the yarn bobbins in apposite modular columns in which the bobbins number can be varied in function of the actual needs, which permits to process automatically in order to obtain at its exit the same columns of bobbins dyed and dried.

With ROBODYE 2000 the only operators intervention consists of filling the apposite designed columns with the greige yarn bobbins and in unloading the dyed and dry material from the same columns at the end of the process (this phase can also be made fully automatic if required). Common characteristic of the major part of conventional systems it is to develop mainly the actual dyeing phase, pushing very hard to obtain the most sophisticated process automation and loading and unloading system of carriers specifically designed to optimize the functioning in the dyeing autoclaves. This often happens without considering the subsequent phases, which are hydro extraction and drying, and which are also parts of the complete dyeing process.

For this reason it often becomes necessary to provide complex systems for the handling of the yarn bobbins from dyeing carriers to the centrifuge and from the centrifuge to drying carriers, with consequent high investments in automation or, alternatively, in labor cost.

Loris Bellini has been producing for years the largely tested HYDRO-COLUMN system, which allows the handling of the yarn bobbins from dyeing carriers to centrifuge and from centrifuge to drying carriers; using as a support centrifugal columns which allow the transportation of the yarn without having the grabbing device touching it.

Being the centrifuge shape obliged by obvious physical laws (it would be unthinkable to project it to load rectangular carriers), with the objective of making the most reliable, economic and simple the handling system Loris Bellini has developed dyeing end drying autoclaves conceived to receive yarn bobbins in centrifugal columns; these columns are transported in groups of six simultaneously directly from the dyeing machine to the centrifuge and to the dryer making unnecessary the use of specific yarn bobbins carriers.

The module of six columns it is handled by a specific robot with multiple grabbing devices, so to allow the simultaneous loading of the complete centrifuge capacity. Once filled as per above mentioned specifications, the dyeing machine, based on the well known RBNV system, has been optimized in its shape and volume so to obtain the ideal liquor ratio. The dryer, modified according to the system specifications, it is based on the widely tested system ARAV and ARSPV.

Advantages of ROBODYE 2000 system

- ❖ The yarn it is loaded into centrifugal columns before the dyeing process starts and it is never touched by the man until the end of the drying process.
- ❖ Absence of traditional carriers.
- ❖ Same circular crown module configuration for the dyeing machine, hydro-extractor and dryer with enormous advantages in reduced automation costs and reliability increase.
- ❖ Extreme loading flexibility: Newly designed dyeing machine but still based on widely known and tested RBNV model.
- ❖ Standardized hydro-extractor: Newly designed drying machines but based on widely known and tested ARAV and ARSPV. These allow absolute absence of pollution and high precision in residual moisture control. Fully automatic interface with greige and dyed yarn warehouse based on the use of Euro pallets.



ROBODYE 2000.

Master offers Indigogenius® for the denim of future

It is a new machine for the slasher continuous dyeing alternative, with indigo and other dyestuffs, of denim fabric warps, which, instead of the normal no. 6-8 dyeing vats, uses ecological and economical technology of two or more Genius® (Patented).



Indigogenius® dyeing module.

Genius® (Pat.) is an integrated dyeing module, consisting of a unique combination of a special dyeing vat, with a group for the diffusion of enzymes in yarn by heat activation and long permanence in inert environment.

This machine offers new indigo dyeing technology, which is more advanced, ecological and economical, and is reported to eliminate much of the typical problems of the traditional dyeing technology.

Furthermore, the machine is particularly designed to the use of sulphur, indanthrene, reactive, etc. dyestuffs and is considered as highlight of the whole Master research, the starting point to the future. Indigogenius® compared to the traditional slasher machines, has the following advantages:

- ❖ Dyeing process independent from external variables.
- ❖ Higher dyeing yield.
- ❖ Better diffusion and fixation of indigo dyestuff to the fibre.
- ❖ Drastic reduction in the sodium hydro-sulphite and caustic soda consumption.
- ❖ Dyeing vats number reduction.
- ❖ Yarn wastage reduction at lot change.
- ❖ Operative flexibility.
- ❖ Process application, with sure lower environmental impact, for the organic cotton (biologic) dyeing.
- ❖ Nitrogen reduced consumption (compared to other systems).
- ❖ Intervention and maintenance easiness.
- ❖ Environment respect and ecology.

The Indigogenius® brings innovation in the dyeing processes and in the high quality textile processing of denim, with notable savings with considerable production costs reductions. ♦