

PULSAR

Innovative system for the dyeing of packages, tops and small warp beams



Pulsar is the result of a brave but simple idea aimed at redefining the standard concept of yarn dyeing in package. Due to its completely innovative concept, Pulsar ensures both relevant savings of costs as well as an overall improvement on the quality of the final dyed product.

This last aspect — plainly confirmed by extensive laboratory tests and by the end users who could personally have a direct evidence — finds explanation from the reduced installed power and from the totally renewed hydraulic circuit. Due to the combination of these two aspects, liquor circulation has an increased “respect” for the treated fiber.

Pulsar takes advantage from a completely reengineered hydraulic circuit, which divides the base plate of the dyeing carrier in three different sectors. By means of dedicated butterfly valves, liquor circulates through them at pre-set intervals marked by the dedicated software.

Combined with a specific mixer (Thermocolormix) installed in the lower portion of the main kier, this solution brings unprecedented savings along the complete dyeing process, such as 70% less electric energy and nearly 30% less water (LR 1:4).

Even for steam — which is now required in smaller quantity due to the reduced level of water — Pulsar brings savings of approximately 20% over a traditional system.

As per all the machines produced by Loris Bellini, Pulsar is designed and manufactured following the highest standards of quality, for its materials as much as for its total safety.

Pulsar does not require an overall different approach if compared to a traditional machine.

Process controller *Leonardo 600*, which is fully developed by our engineers, allows a very easy and intuitive approach with the final intent to simplify the interaction of the final end user, thanks to the highly automated functions expressly conceived for this machine.

In case a larger integration with pre-existing Management Systems is required, Pulsar is also ready to accept process controllers manufactured by third parties.

This machine is available in different capacities, starting from the small size of 50kg up to very large lots of 1,5 tons each. By means of a pressurized air-pad system, Pulsar allows variable loading down to 50% of the nominal capacity of each kier, while keeping liquor ratio to a nearly constant level.

By assuring a concrete reduction in the consumption of water, steam and, in some cases, chemical products, as well as savings of electric energy up to 70%, Pulsar is projected into the future and make it the best choice for all those Customers who intend to accelerate the payback of their investment, while improving the final dyeing quality of the end products.



PULSAR. Some Characteristics

The base plate of the loading carrier is divided in three different sectors that allow dye liquor to flow through a single portion of the material by pre-set intervals — normally 15 seconds each. This logic can be extended to any Pulsar, no matter what the nominal capacity of reference is.

The hole located at the center of the base plate, which is aligned with the Thermocolormix installed in the lower portion of the main kier, allows a proper mixing of the dye bath from both thermal and chemical aspects.

The loading carrier of Pulsar is normally provided with spindles having a star section bar up to half of their height, while the rest is a M16 threaded rod up to the top, so that variable loading down to 50% can easily be achieved at nearly constant liquor ratio.

It is also possible to equip the loading carrier of Pulsar with perforated spindles having a cylindrical section, without altering the flexibility of variable loading.

As per the traditional RBNVI vertical machine, also the Pulsar system has an internal serpentine for the indirect heating/cooling of the dye bath. This is installed between the base plate of the loading carrier and the very bottom of the kier.

This solution ensures two great technical advantages:

1. improves liquor ratio due to a better optimization of the otherwise empty space in the lower portion of the main kier
2. allows a more accurate control of the heating/cooling gradients.

The indirect serpentine is connected to the circuit by means of flanges that give access to an easy and fast intervention in case of ordinary maintenance.