Stator Systems

Stator Systems

Trickle impregnation machines

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"The â€œTricklingâ€• impregnation method is considered as the most effective impregnation system for electrical windings , both for rotors and stators.
The components are positioned & fixed horizontally on auto-centring chucks. These chucks allow the components to rotate constantly on the central axis and they carry them through the different phases of the impregnation process (preheating, trickling, gelation, polymerization and cooling).
Depending on the component size and on the process requirements, the rotation speedâ€”which plays a major role for a good resin penetration â€“ is electronically controlled through the whole process, paying special attention to the trickling and gelation areas.

The impregnation area is composed of one or more trickling stations equipped each one with a series of drippers, strategically positioned on the parts in order to impregnate them on specific areas and facilitate accurate impregnation whenever this is needed by the process. The resin flows through the drippers by one or more pumping groups.Â

Thanks to the accurate control of impregnation parameters (resin volume, parts rotation speed, temperatures and times), the system can apply the resin with maximum accuracy, using the capillarity principle, ensuring maximum absorption and avoiding resin dropping from the parts .

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Â The component constantly rotates, during both the trickling and the gelation phase, so the liquid product (resin) applied penetrates evenly and fully in the component windings (slots and heads), getting high levels of solids content after polymerization.
The result is a perfectly impregnated winding, particularly and specifically in the
areas where impregnation is needed (winding slots & heads). The â€œTricklingâ€• system is particularly used for all products where thermodynamic stresses are relevant and strong in their service.

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The technology used in our trickling systems complies with the best quality, reliability and automation standards. These features result in several advantages by the trickling impregnation method;Â
High-quality of the impregnation

No afterworks after process
Maximum resin filling on the winding slots
Very high Bond-Strength standards
Excellent resin penetration in the whole winding
Short process times
High productivity
Possibility to use resins with or without monomers

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- The TF TRICKLINGÂ series is designed to combine user friendliness, flexibility and environmental friendly. All components were chosen for their reliability and safety. The heating systems are designed to ensure excellent process and energy saving performances. All impregnation parameters are controlled by PLC. If different products undergo the impregnation process (â€œRandomâ€• production mode), you can set the following specific parameters for each single component;
  Component rotation speed
- Trickling time, station by stationÂ Â
  Resin pump speedÂ Â
  Drippers positioning on the component, station by station
- OurÂ TF Trickling systems are designed and realised in order to use Traditional polyester , No-Solvent Polyester , Epoxy and Epoxy-Phenolic Resins, and all other medium-high performance products suitable for this impregnation method.