

The new Montex stenter with the integrated MonforClean modular exhaust air treatment system and further energy optimisation features.



Further benefits and savings with the new Monforts MonforClean

A. Monforts Textilmaschinen GmbH & Co. KG will be presenting an energy-optimised new version of its industry-leading Montex stenter for the first time at ITMA 2019 in Barcelona from June 20-26th, at stand D101 in Hall 2.

With the introduction of the new MonforClean exhaust air treatment system and other unique process innovations, Monforts has been able to further reduce the energy consumption of Montex stenters by a further 13%.

Exhaust air treatment on stenter frames has posed particular challenges over the years, since the air can contain significant amounts of oil, fibre and even wax particles that may see emissions limits being reached in the processing of certain fabrics, depending on the legal specifications.



The patented Monforts Bionic Fin® slot sealing absolutely minimizes air leakage at the fabric inlet and outlet of the stenter chamber.

In addressing this issue, Monforts is now incorporating the MonforClean module into the stenter frame, so there is no additional space requirement. At the same time, the costs for laborious secondary installations and the piping of the exhaust air treatment components, as well as supporting structures are eliminated due to the machine configuration.

The waste heat from the drying process is used to pre-heat the drying air, resulting in a radical reduction in the conventional heat supply required compared to gas and thermal oil heating.

The further integration of an automatic exhaust air filter washing system automatically cleans the module elements, ensuring the consistent efficiency of both the filter and heat recovery modules.

The modular MonforClean system is also available in different expansion stages and automates the heat recovery and exhaust air treatment, while eliminating odours and ensuring the exhaust air is highly purified before escaping into the atmosphere.

This allows finishing mills to always be on the safe side, ensuring growing future demands in respect of heat recovery, exhaust air cleaning and odour elimination can always be met when required.

Bionics

Another challenge on a finishing line is exposure of the fabrics to ambient air at the stenter's entrance and exit, which can also lead to a loss of energy.



The Monforts HMI operator dashboard with a visualization slider function for easy operation of the stenter range.



A new innovation here is in the form of advanced slot sealings based on a patented new flexible material in a configuration that draws on bionics – specifically the way the fins of fish will automatically steer a passage through water with endless, barely discernible movements.

This material serves to hermetically seal the stenter frame at the infeed and outfeed while constantly adjusting to the profile of the different fabrics being cured and ensuring an absolute minimum of cold air is drawn in and only marginal warmth can escape.

Eco Applicator

Additional energy can be saved by installing a Monforts Eco Applicator in front of a Montex stenter, which can significantly minimise the application of finishing formulations required for specific treatments compared to a padder/foulard, resulting in a big reduction in the energy required for subsequent drying in the stenter and reducing the amount of residual liquor when draining the trough after the finishing process.

“The latest energy-optimised Monforts stenter frame – especially combined with a downstream Eco Applicator – sets new benchmarks in terms of energy efficiency and helps conserve resources,”

The new Monforts Eco Applicator for knitted fabrics.



The new Montex chamber is operated with an additional preheated fresh air system for even less thermal energy consumption by the dryer.

says Klaus Heinrichs, Monforts Vice-President. “Setting the initial moisture content requirement for a specific process, before drying to a minimum value with an automated process, helps reduce heat evaporation and consequently, energy consumption.

“In addition, the hermetic sealing of

the stenter frame prevents the loss of heated air as well as the ingress of excessive cold air – which has to be heated back up. The MonforClean module automates the heat recovery and exhaust air treatment processes, while eliminating odours. As a result, the maximum possible energy savings no longer depend on the machine operator, but are instead harnessed in automatic operation. The MonforClean’s modular design can be adapted individually to the needs of the customer. Options include the HR heat recovery module only, the HR plus the EAC (exhaust air cleaning) module or the HR, EAC and a UV module for elimination of odours. The system prevents visible smoke from coming out of the stack of a dryer.

“In total, the latest Monforts energy-optimised stenter frame will cut energy consumption by up to forty per cent compared to a conventional stenter equipped with no heat recovery or energy optimisation measures. We invite all existing and new customers who are looking to

conserve resources and save long-term on costs in the energy-intensive drying process to come and talk with us at ITMA 2019. Thanks to a significant reduction in energy costs, they will discover that the investment costs in new Monforts installations pay off surprisingly quickly.” ♦