

Maintenance tips – the key to energy savings

Over a period of ten years, the costs of energy (electricity, steam, gas) accounts for more than 60% of the initial investment of a finishing system. Skilled operation and regular maintenance of the Monforts system can subsequently reduce costs. This article is intended therefore to highlight simple tasks and tips to assist the machine operator to save energy whilst maintaining the high quality of fabric treatment.

It is important to know and understand the maintenance plan for the installation. Only a system which is maintained regularly can provide full output with most economic input of energy.

The system's lint filters should be inspected at least once every shift to ensure that they are clean and they must be cleaned with a brush or vacuumed if necessary.

The heat recovery modules also require cleaning at the prescribed intervals. Soiled screens and heat exchangers reduce the output of the system substantially and increase the energy consumption.

Systems without Qualitex: the setting of the contact pressure of the padder should be within the working area of the diagram at the operator console to ensure that the squeeze effect is uniform over the full width.

The more moisture that is removed and, the better it is removed, the less energy is required for drying.

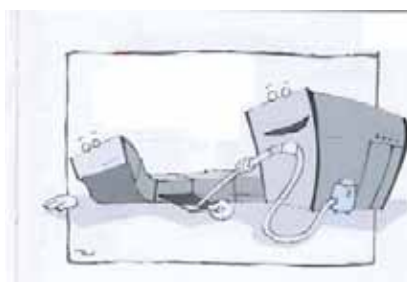
Drying temperature range from 105° to 150°C (depending on the fabric). Material, finishing agents and methods determine the drying temperature. The recommendations of the dyestuff and/or chemicals producers should be observed. High drying temperatures not only consume too much energy, they often also damage the fabrics to be finished.

Pay attention to the optimum drying and heat-setting temperature.

An important aspect for good drying is to measure and control the exhaust moisture which is the moisture contained in the exhaust air of the dryer. Depending on the fabric and the initial moisture, the optimum values are 10-20% by volume. If the exhaust contains less moisture, too much fresh air is heated and energy wasted. If the exhaust contains too much moisture, drying is poor; it takes more time



and energy is wasted. When drying is the only purpose, it is important to monitor the residual moisture - being the moisture contained in the fabric when it leaves the system. The optimum residual moisture is measured with a humidity meter at the outlet of the dryer then controlled as needed.



Some examples of optimum residual moisture:

- ❖ Co 6-8%
- ❖ CV 8-10%
- ❖ Wo 10-12%
- ❖ PES 1-2%
- ❖ PES/Co 2-4%

If the fabric is very dry, too much energy is wasted and drying is too expensive. At the same time, production is unnecessarily slowed down. Too little residual moisture also causes loss of quality.

Optimising the dwell time. Depending on the fibre, the heatsetting of textiles requires a certain dwell time which must be observed to obtain the required fabric characteristics.

Usual dwell times

PES = 10 seconds at 185-200°C (depending on fibre supplier)

Elasthane = 30-45 seconds at 185-195°C (depending on fibre supplier)

All stenter frame chambers should have the required temperature for heatsetting.

To obtain the optimum production speed at the required dwell time, automatic control (Monformatic) is a necessity. This will ensure the optimum production speed with minimum energy consumption.

Since heat setting is a process without exhaust moisture, the exhaust fan motor cannot be controlled by the exhaust air moisture meter. The setting should be done manually to maintain a slight vacuum in the stenter.

Normally this exists at 50-60% exhaust capacity. If the product tends to evaporate and the stenter emits smoke at the inlet and outlet openings, the speed of the exhaust fan motor should be increased until no smoke is emitted.

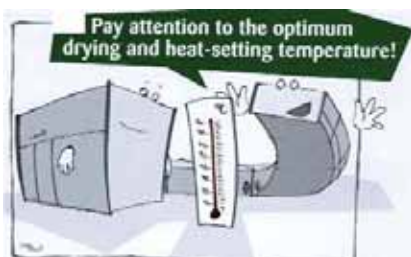
The lower the exhaust volume, the less energy is consumed

If Thermat is fitted it should be set to 70-80°C. This ensures automatic control of the exhaust fan.

- ❖ Setting time: Is the heating time + dwell time
- ❖ Heating time: Is the time to obtain the required dwell temperature
- ❖ Dwell time: Is the time the fabric remains in the machine after the heating time.

The speed of the air circulation fan motors should be adjusted as needed. Higher speeds for heating, lower speed during dwell time.

Setting the air circulation fans (with stenters).



Practical Hints



The Montex stenter is equipped with the TwinAir system where the flow rate for bottom and top air can be set separately. Set the air circulation fans to ensure that the fabric 'floats' in the dryer without making contact. Some common fan settings for maximum process speeds are illustrated.

Do not heat the system longer than is needed. Do not hold the system at temperature without fabric longer than necessary.

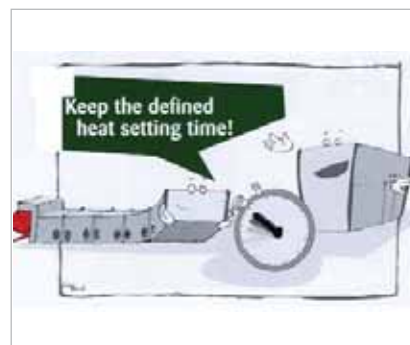
Both waste energy and contaminate the environment.

Refurbishment

Monforts offer a variety of modification and extension kits for older systems. If a heat recovery unit is service-fitted up to 30% of the energy needed for heating can be saved.

If the air circulation fans are fitted with modern frequency converters, the consumption of electricity can be drastically reduced. And that with the shortest pay back period you can imagine.

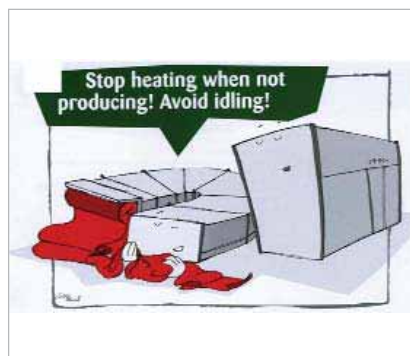
The Monforts soft-coating® method reduces the starting moisture. This saves



energy otherwise spent on drying or the production speed can be increased.

Online tele service

Any machine downtime costs money. Therefore, modern Monforts systems are serially shipped with online tele service. This not only reduces the start-up time during the commissioning phase, it also ensures direct online assistance by the supplier if a problem occurs. This ensures the shortest downtime, software updates and reprogramming and modernisation of machine controls.◆



Light at the end of the tunnel: Fresh start for Trevira

From the fibre and flat filament yarn through to dyed textured yarns, Trevira is the only supplier in the world that offers the complete range of textile polyester products from the one source. Fields of application are home and household textiles, apparel, automotive interiors, hygiene textiles and technical applications. Trevira is the first call for specialties such as fibres and yarns for flame retardant or permanently antimicrobial textiles.

The last twelve months have been testing ones for the whole textile industry and not least for Trevira. From the financial crisis, insolvency and restructuring a new and compact company is emerging, which will concentrate on its core business in profitable polyester specialties.

The rapid conclusion of the sales negotiations only two months after filing for administration marks the first step towards a successful new start.

As from the 1st October 2009 the new owners of Trevira and the Frankfurt entrepreneurs Stefan Messer and Karl-Gerhard Seifert.

They have demonstrated a long-term business interest in the polyester manufacturer.

"On the basis of our own entrepreneurial experiences we intend to set the traditional brand of Trevira back on a successful course in the apparel, home textiles and automotive industries as well as in the hygiene sector, and secure maintenance of jobs in the long term.

Following the many changes of ownership over the last decade, we are convinced that the restructured Trevira now possesses all the prerequisites to become a stable and sustainable business".

The new company will comprise the three production sites Bobingen (Germany), Guben (Germany) and Zielona Góra (Poland), together with the sales location in Hattersheim near Frankfurt, involving a total of some 1450 employees.

MoOD 2009 – show and marketing activities

The Trevira CS brand will continue to play the leading role in the new company as well.

The product range is to be maintained, guaranteeing customers provision of flame retardant Trevira fibres and yarns by Trevira and its partners for the future as well. Sales and marketing activities will carry on as usual.

With a stand at MoOD, Trevira is flying the flag even in this difficult year

and is maintaining the Trevira CS Award for the most innovative customer collection of flame retardant Trevira CS fabrics. On the Trevira stand 27 Trevira CS suppliers are showing a total of 33 articles, presenting a colour spectrum ranging from hard white, grey and green to yellow green.

The sustainability of Trevira CS fabrics is a central theme of the stand message. Trevira's product developer Anja Greger is a member of the international panel for the selection of the "Blue drop" products. This is a new initiative of MoOD, to award a prize to the best products submitted for the MoOD sample bank.

The converter catalogue "Fabrics Make a Place" was welcomed at its first appearance in 2007 and this year will be available in the second edition.

At the end of August it was circulated worldwide to around 12,000 furnishers and interior designers, who have the opportunity to learn about the latest developments by 46 fabric suppliers.◆