

Paper Machine Fabric Cleaning & Conditioning Technology

HelioJET
CLEANING TECHNOLOGIES

The HelioJET™ Fabric Cleaning and Conditioning Program

Product Quality and Production

Each paper machine poses a set of unique challenges to the paper maker as he faces the issues that surround machine performance and runability. Striking an optimum balance between production, product quality, and cost efficiency is a continual goal that is often met with difficulty, or not met at all.

One major factor that often contributes to inefficiency and low product quality is the lack of a comprehensive fabric cleaning and conditioning program. Contaminants such as pitch, tar, sizing residue, latex, stickies, hot melts, and ink, contribute to losses through reductions in felt permeability and product rejects. Contaminants can also increase down time and the frequency of sheet breaks. These problems are often magnified on alkaline machines and machines that use high percentages of secondary fiber. Clean fabrics with high

permeability can help maintain good product quality and high production levels as well as reduce sheet breaks and down time.

What will the HelioJET Program do for me?

The HelioJET Program offers a complete solution to cleaning and conditioning paper machine fabrics. With the HelioJET, it is possible to clean any or all the fabrics on your paper machine at the push of a button.

How does it work?

By utilizing HelioJET Patented Technology, this system provides an instantaneous supply of pressurized hot water and thoroughly dispersed chemical cleaning agents. This powerful solution is then applied to the paper machine fabric on a continuous or intermittent basis.

HelioJET Patented High Pressure Hot Water Technology



HelioJET Fixed Flow System™

High Pressure Hot Water on Demand

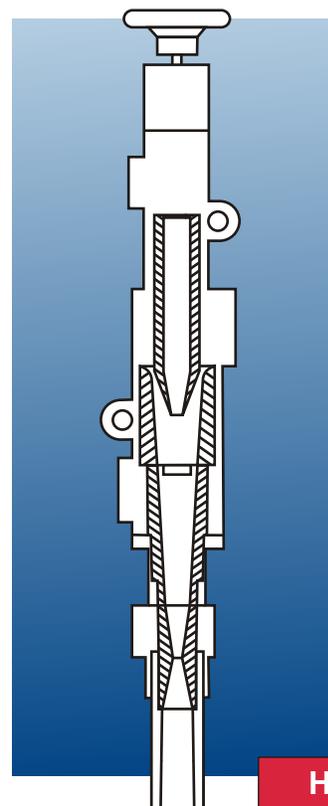
At the push of a button, the patented Fixed Flow System™ creates a solution of hot water and He-Chem™ proprietary cleaning agents under pressure. This powerful solution is then applied to your paper machine fabrics via the HelioJET Fast Clean Shower System.

What makes the Fixed Flow System special?

The HelioJET Fixed Flow System is internally driven by a unique device called the Pressure - Amplifier - Condenser (PAC™ or HelioPAC™).

The **Patented HelioPAC™** is located within the Fixed Flow System's cabinet enclosure, and is the real force behind this state of the art cleaning system.

The HelioPAC utilizes existing mill steam and cold water supplies. As steam enters the HelioPAC, it is expanded to supersonic velocity and immediately condenses into an on coming cold water stream. The steam's heat and momentum are then transferred to the water. The result is instantaneous pressurized hot water at more than 99% efficiency. For



example: When using 125 psi steam pressure, and a cold water supply of 60 psi, the HelioPAC can deliver hot water at 300 psi and 185°F. The HelioPAC does all this with no moving parts, making it the most efficient, low maintenance system available. Another unique advantage of the HelioPAC is that during operation, it creates its own internal vacuum. This allows He-Chem specially formulated chemicals to be siphoned automatically. As the chemical enters the HelioPAC, it encounters extreme heat and turbulence which thoroughly mixes and disperses it into the pressurized hot water, creating an extremely effective cleaning solution.

HelioPAC™ Cutaway

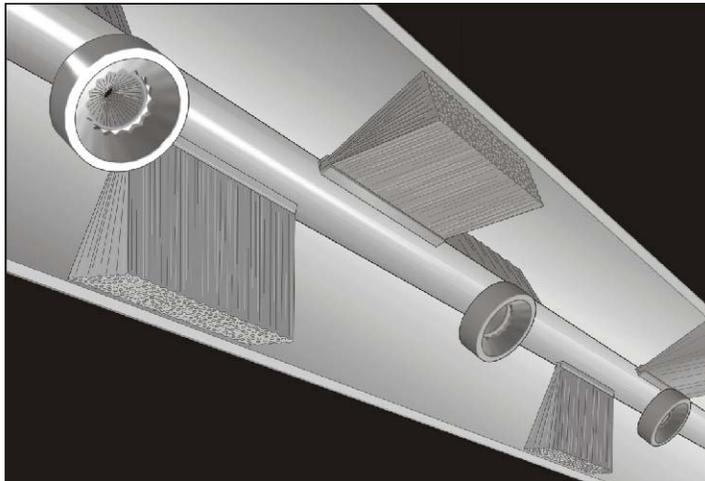
Fast Clean Showers™ in Manual or Motorized Versions



With any piping network, debris travels through supply lines, causing shower nozzles to plug. **HelioJET Fast Clean Showers™** are designed with internal rotating brushes that unplug every nozzle in a matter of seconds. This technology eliminates felt streaks and improves moisture profiles by delivering consistent pressurized hot water and He-Chem™ cleaning agents evenly across the felt. Fast Clean Showers are available in manually operated, or motorized versions.

HELIOJET CLEANING TECHNOLOGIES IS PROUD TO INTRODUCE THE NEW PATENTED SMART NOZZLE™ FEATURE!

AUTOMATICALLY CLEANS PLUGGED SHOWER NOZZLES!



Fast Clean Shower™ (Internal View)

New **Motorized Fast Clean Showers with Smart Nozzle™**

The Smart Nozzle Feature senses plugged nozzles and automatically activates the Fast Clean Shower. All the shower nozzles are cleaned within seconds. No attention is required by the operator, and there is no interruption to paper production.

When you purchase a *Complete HelioJET Felt Cleaning System with Motorized Fast Clean Showers*, you automatically receive the Smart Nozzle Feature. This feature is also available as a retrofit for our valued customers who already have HelioJET Systems.

Manual Fast Clean Showers

Manually operated Fast Clean Showers require a worker to go to the shower location and physically “brush and flush” the showers. This procedure is simple, no tools are required, and it should take less than five minutes per shower. Paper machine operation will not be interrupted.

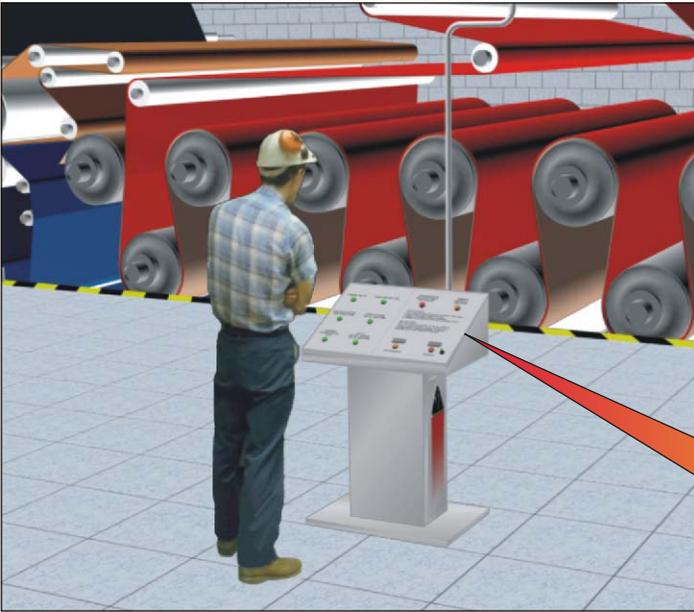
Motorized Fast Clean Showers

Simply push a button on the Custom Control Panel and the Fast Clean Motorized Shower is activated. All the shower nozzles are cleaned within seconds, and there is no interruption to the paper making process.



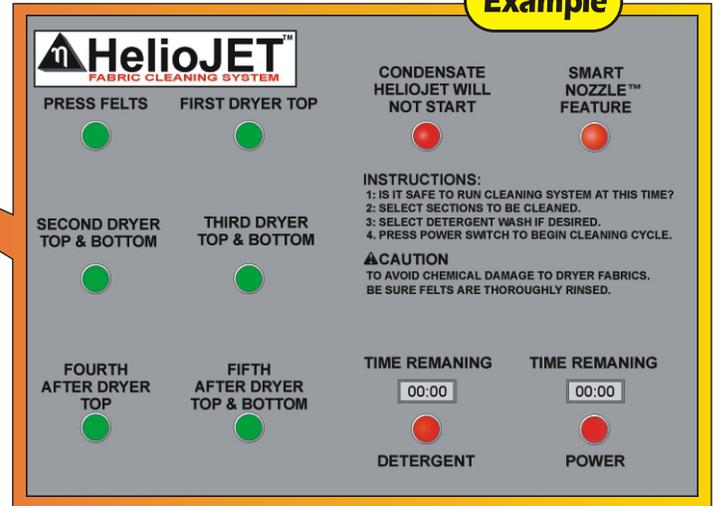
Fast Clean Shower™ (Manual Version)

Custom Control Panel™



appropriate to select the option for continuous press felt and wire cleaning. However, a sheet break can be a perfect time to clean a dryer felt section, or all the dryer felt sections at the same time. With the Custom Control Panel you have any number of options at your finger tips.

Example



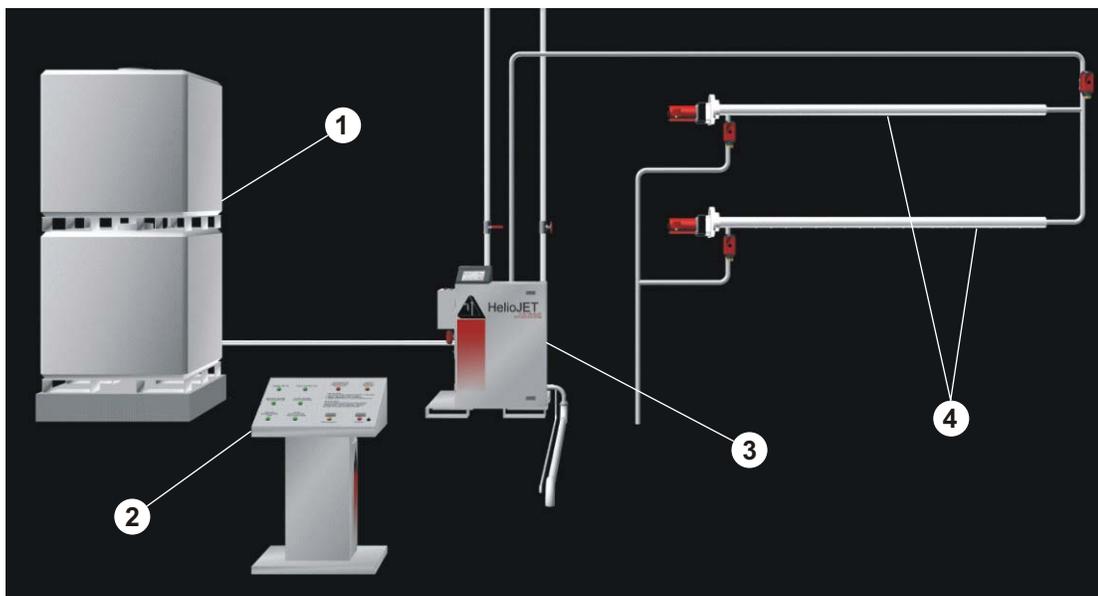
HelioJET control panels are custom designed to match your paper machine and operate according to your specifications. The operator is able to select any number of cleaning options on demand. For example, during production, it may be

He-Chem™ Proprietary Formulations

He-Chem Chemical Cleaners are specially formulated for use with the HelioJET Cleaning Program. They are customized to remove soil deposits that are unique to the paper industry, and they are safe for use with HelioJET equipment. In addition to this, He-Chem products are designed for rapid biodegradability, so they work well in mills that have closed water systems.



System Overview



System Components

- 1 He-Chem™ Cleaner
- 2 Custom Control Panel™
- 3 HelioJET Fixed Flow System™
- 4 Fast Clean Showers™

System Components

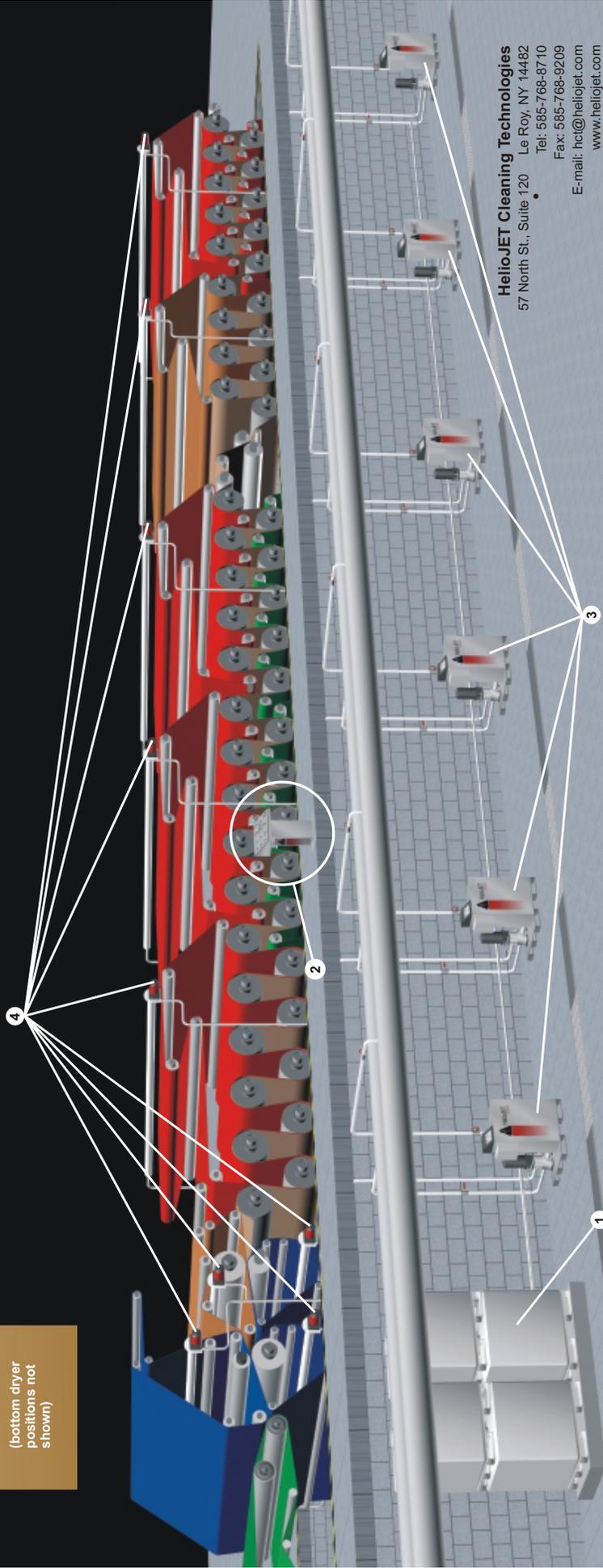
- 1 He-Chem™ Cleaner
- 2 Custom Control Panel™
- 3 HeliJET Fixed Flow System™
- 4 Fast Clean Showers™
(bottom dryer positions not shown)

Our Commitment

Since 1990 the HeliJET staff has served the paper industry with its unique technology and expertise. HeliJET Systems are being used successfully by major paper companies world-wide with installations in the United States, Canada, Europe, and South America. Our list of satisfied customers continues to grow, and it is our goal to continue this trend. We are committed to making each installation a great success.

What Next?

If you would like to take the first step toward higher product quality, increased production, and greater efficiency, simply complete the enclosed "Paper Machine Fabric Cleaning Questionnaire", and fax it to: **HeliJET Cleaning Technologies at 585-768-9209, or call 585-768-8710** to speak with a specialist. Thank you.



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