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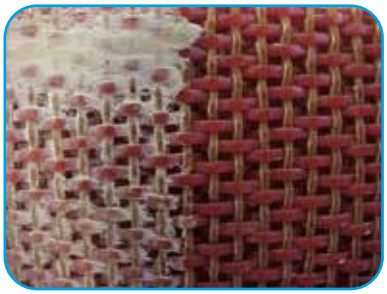
ProJet B.V.

Professional high pressure water jet technology

Power Cleaner

High Pressure Cleaning for:
- Dryer Fabrics for Wetlaid & Airlaid Lines;
- Spinbelts for Spunbond & Meltblown Lines;
- Spray Cabin/ Saturator Fabrics;
- TAD Fabrics.



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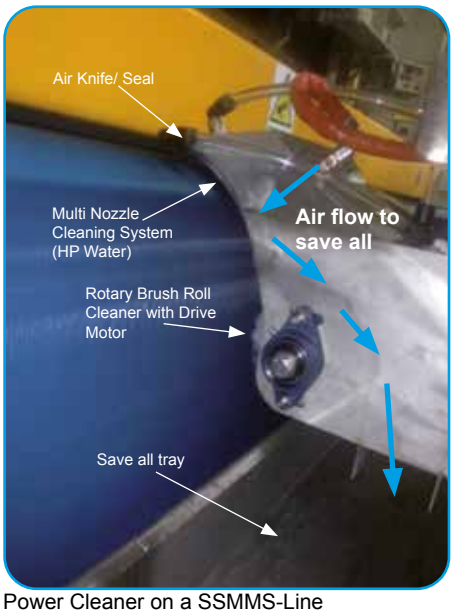
Introduction

Power Cleaner on Wetlaid Nonwoven Line

This cleaning system has been applied successfully on many types of continuous endless production processes, where a continuous cleanliness of the process wire belts or fabrics is required. A clean wire belt, with consistently high air permeability, delivers important productivity and performance advantages for forming, bonding and dryer section applications.
A clean wire belt will provide substantial advantages in several sections of the nonwovens production process:
- Forming Sections Spunmelt nonwovens (Spunbond and Meltblown);
- Binding sections of wetlaid and airlaid processes;
- Dryer Sections of wetlaid and airlaid processes;
- Oven Sections of insulation glasmat production;
- Oven section of PVC/Lineleum production;
- Forming and oven section of MDF Board production;
- etc..

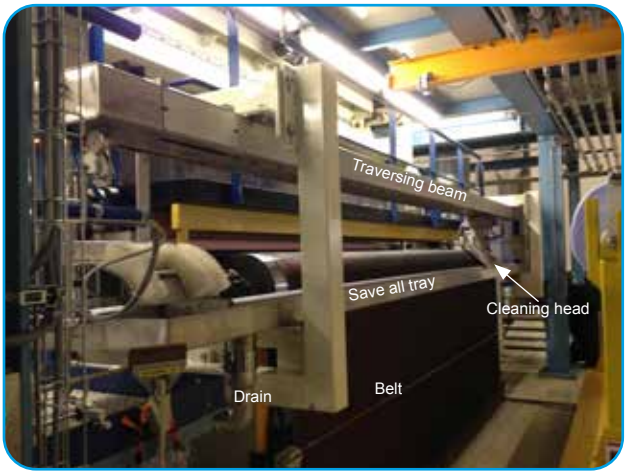
The desired end result, of a clean wire belt, is a substantial improvement in production parameters, such as:
- Improved formation on Spunmelt nonwovens (Spunbond and Meltblown);
- Available dryer capacity in oven sections;
- Distribution of the binder in the product in bonding or saturator sections;
- Uniform water permeability and therefore uniform forming properties in forming Sections of insulation glasmat production.

This brochure shows how an effective ProJet fabric cleaning system prevents contamination build-up when used continuously. The ProJet system consumes very little water, compressed air, or electrical energy.
This innovative cleaning system is being applied successfully to many different types of applications.



Power Cleaner on a SSMMS-Line (Spunbond & Meltblown) Reicofil IV

Cleaning Principle



Power Cleaner on a SMS-Line (Reicofil III)

Continuous mode:
- 24 hours per day, as long as machine is running;
- Cleaning pressure: max. 350 bar (5000psi);
- Water consumption / nozzle: 0,5l/min (0.1GPM);
- Multiple nozzle;
- Air consumption: 1 m3/min (30cfm).

Cleaning principles:
- Cleaning against roll, on production side;
- Multiple nozzles with different impingement angles;
- Drying/discharge with air knives;
- No chemicals added.

- *Optional:* Water heater (100°C/ 212F);
- *Optional:* Brush roll for additional removal of long/ endless fibres.

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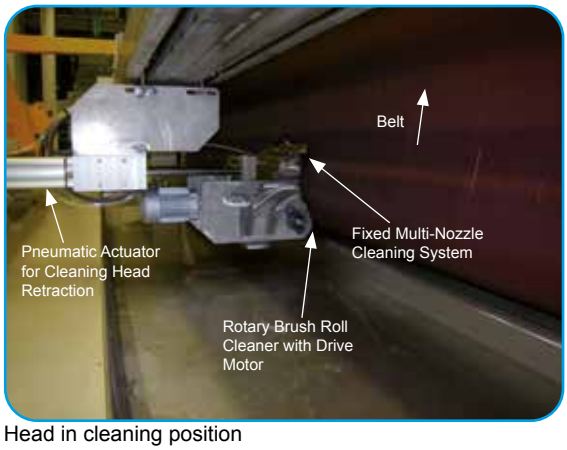
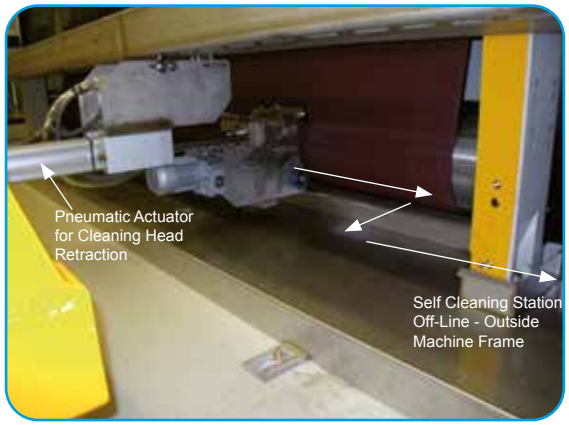


Head in cleaning position



Fully retractable head

Contamination on the spinbelt of Spunbond and Meltblown processes

Both *Spunbond* and *Meltblown* are known to create contamination issues on the conveyor belt (also known as spinbelt), each process having its specific characteristics.

In the *Spunbond* process, several contamination causes play a role:
- Spinnerets can be worn causing polymer drips on the conveyor belt.
  The size of these drips may vary from 0.1-25.0mm in diameter;
- Extrusion may not be uniform, causing the continuous filaments to break.
  The broken filaments will not cohere to the rest of the web and remain on the conveyor belt,
  creating long fibers (“ropes”).

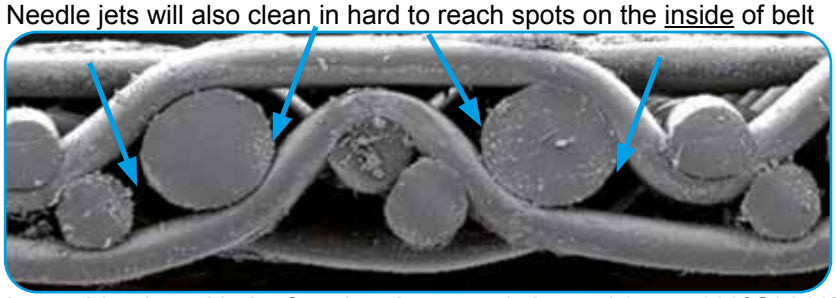
In *Meltblown*, there are three sources of contamination on the conveyor belt:
- The polymer mixture is never uniform, creating a monomer “dust” which will plug the conveyor belt;
- The short meltblown fibers itself may plug up the belt;
- The spin finish on the fibers will cohere to dust and also plug up the belt. Generally taken,
  all three contaminations will plug up the belt evenly, meaning the belt will loose its permeability uniformly over
  the full size of the production width.

The vacuum boxes underneath the spinneret beams pull dust and loose fibers into the belt, creating plugging of the belt.

Problems caused by contamination

The local contamination, such as drips and “ropes”, cause uneven and non-uniform formation of the web in cross machine direction, leading to thinner areas in the web and even holes. The overall contamination, such as dust, short fibers, monomer and spin finish, cause a decreased permeability, leading to more drag of the belt on the vacuum boxes. This will wear the belts prematurely and therefore shorter lifetime. All in all, contamination on the belt lead to:
- Poor run ability of the line;
- Web quality issues;
- Premature wear of belts.

Needle jets will also clean in hard to reach spots on the inside of belt



In combination with the fact that the water is heated (up to 100°C/ 212F),
an optimum cleaningefficiency is achieved: even spin finish, paraffin and oil are removed.

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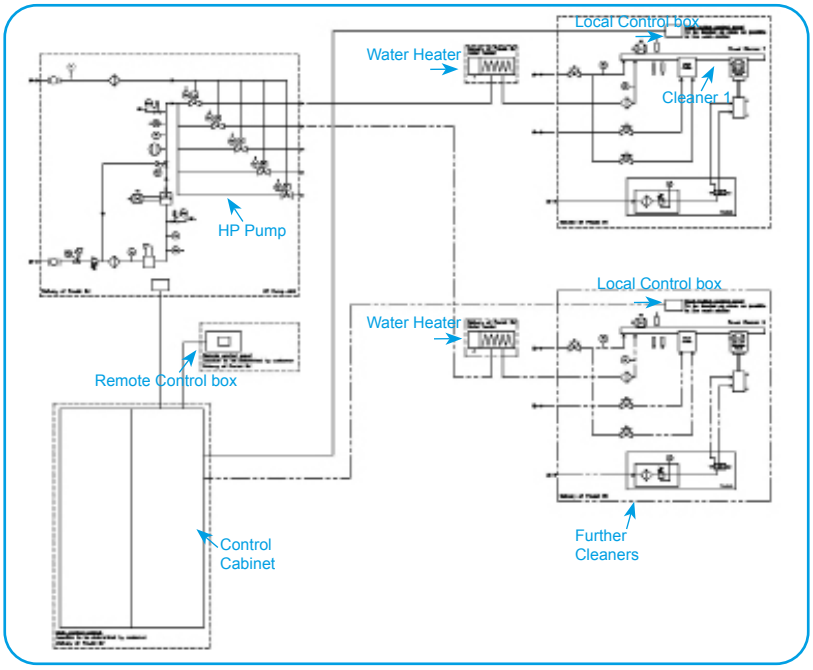
System layout/ scope of supply



Pump module: up to 5 cleaners can be supplied with one module.

The Pump module is completely assembled on a stainless steel frame, with integrated high pressure filters installed.
All safety components, to include pressure switches, temperature switches, solenoid valves, pressure regulator, etc.
are included in the pump module supply. The pump module is completely pre-assembled with stainless steel piping and all electrical connections terminated in a junction box that is part of the pump module supply.

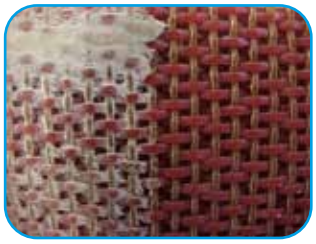
Control system: up to 5 cleaners. Can be controlled with one system.

A central control cabinet is supplied with single or multiple ProJet cleaning system installations.
In addition, each cleaner is supplied with a local control case. As an option, a touch panel control case wilol be supplied for remote control of all ProJet systems from a control room or other central locations.

Cleaning Examples

Spinbelt Cleaning for Spunbond & Meltblown lines

Removol of:
- Long/ Endless Fibers;
- Polymer Drops;
- Monomer;
- Short Meltblown Fibers & Dirt.

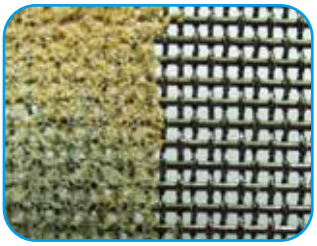


Spray Cabin & Oven Belt Cleaning for Airlaid lines

Removol of:
- Latex;
- Fibers;
- Dust & Oil.

TAD-Fabric Cleaning for Wetlaid lines

Removol of:
- Binder;
- Fibers;
- Dust & Oil.



Oven belt for Glass Fiber Mat lines

Removol of:
- Acrylic Binder;
- Fibers.