

Web and Sheet Cleaning



 **SIMCO**
Industrial Static Control

An Illinois Tool Works Company

Worldwide Leaders in Static Control



Chapman ellex HERBERT

Web and Sheet Cleaning Systems

The converting and printing of paper, carton board, corrugated board, film, foil, plastics and other materials all have one thing in common... contaminants that reduce the overall quality of the material and reduce the operating performance of your machinery. The solution to this problem is available from Simco Industrial Static Control.

Printing Industry

Profitable quality printing depends in part on clean stock. Even the cleanest of sheet stock carries spray powder, paper dust, lint, loose paper fibers, and paper chips into the press. Roll stock also carries slitter dust, paper lint, and loose paper fibers into the printing process as delivered from the manufacturer. As the sheets and webs are fed through the printing stations, all of this particulate is deposited on the blankets and plates. As the particulate accumulates, more frequent wash-ups are required, dramatically reducing production speeds.

Particulate that are not removed from the material or deposited on the blanket become part of the finished product. This particulate leaves residual markings such as hickeys and voids in the final printed image.

Converting Industry

Today's competitive standards demand that products be completely free of contamination. Slitting, coating and laminating operations are held to tighter standards and converters are looking for solutions.

The process of converting paper and film generates dust, lint, powder, fuzz, and fibers. This particulate becomes lodged on material surfaces and roll edges and is then transported directly to the customer. Failure to reduce or eliminate the level of material contamination will lead to equipment downtime, increased maintenance, poorer quality product and dissatisfied customers.

What's a micron?

One-thousandth of a millimeter! Here are some familiar items and their average size in microns:

- Bacteria 2 microns
- Dental Powder 10 microns
- Scouring Powder * 25 microns
- Human Hair 70 microns
- Grain of Salt 100 microns

* Smallest seen by the naked eye!

SYSTEM SELECTION GUIDELINES

Application	Ion-O-Vac	Neutro-Vac
Web Cleaning	Yes	Yes
Sheet Cleaning	Yes	No
Head Location	Over Roller	Over Web
Vacuum Air Flow	High Velocity, Low Volume	Low Velocity, High Volume
Cleaning Options	Contact / Non-Contact	Contact / Non-Contact/ Explosion-Resistant
Existing Press Designs	Yes	No
Rotary Brush Cleaning	Yes, Mark IV	No
Applications:	Sheet-Fed Printing Press Business Forms Press Paper Manufacture Magnetic Tape Manufacture Medical Packaging Coating and Laminating Corrugated Materials Slitting and Rewinding	Web-Fed Label Presses Slitting Operations Paper and Film Converting Corrugated Materials Coating and Laminating Food Packaging Medical Packaging Trays

Ion-O-Vac® Sheet and Web Cleaner Systems

The Ion-O-Vac line of sheet and web cleaners is designed to clean materials in sheet or web form. The Ion-O-Vac uses a combination of high velocity air speed and static elimination to clean the material.

Ion-O-Vac heads are primarily installed where material has more than 30 degrees of surface contact with a roller or cylinder. Surface contact is important to ensure that the airflow does not pull more delicate materials into the vacuum head. Ion-O-Vac heads are installed close to the material surface with soft bristle brushes that extend the tips of the head to the paper. Ion-O-Vac heads are installed over the cylinder with soft bristle brushes extending to lightly touch the material. This design enables vacuuming of the material without potential for material damage.

Mark IV Performance: Estimate of cleaning efficiency on a PVC web, 3 mil thick, running at 150 ft/min.

89% – 90%	5 to 25 microns
96% – 97%	26 to 50 microns
98% – 99%	Over 50 microns

Mark IV Rotary Brush Head Design

Ion-O-Vac Mark I

Mark I Systems are designed to remove particulate down to 20-microns. The Mark I eliminates any static charge and lifts spray powder and other particulate from the sheets as they pass over the impression cylinder. As an example, some Simco customers have increased production from 2,000 to 10,000 sheets between wash-ups.

Removal of the particulate not only improves production speeds it tremendously lowers the incidence of hickeys and voids. By removing the static charge from the sheets, 'crows feet' and 'lightning tracks' are also reduced or eliminated entirely.

The Mark I sheet cleaner is used extensively in the printing industry on Heidelberg, Komori, Man Roland, Mitsubishi, Adast, and other presses. Designs for many of the presses already exist and custom engineering is available to manufacture a head to accommodate modifications to your press. The Mark I web cleaner is used for Mark Andy, Allied Gear, Nilpeter, Rotopress, Comco, Propheteer, and other presses.

Standard features include a canister collector with cartridge filter, pre-filter and motor starter, Ion-O-Vac head with static eliminator, brushes and brackets.

Options

- Double surface cleaning available for web presses
- Contact and Non-Contact configurations
- Quick-Release Brackets, available for Heidelberg systems, allow for quick and easy head removal for brush replacement
- Micrometer Adjustment to adjust the position of head in relation to the impression cylinder or roller
- Manual or Pneumatic Retraction Systems, for web presses, provides up to four-inch clearance in the retracted position

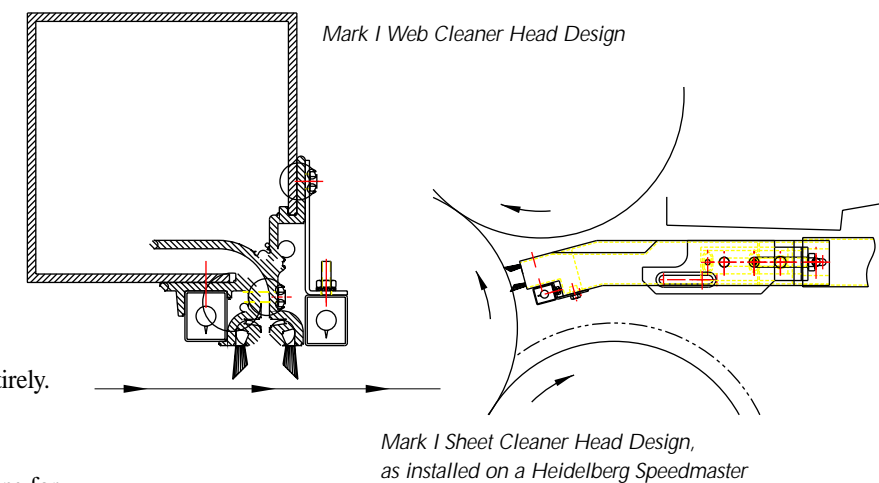
Ion-O-Vac Mark IV

Mark IV Systems utilize the power of rotary brush action to scrub the material surface, cleaning down to 5 microns. The scrubbing action of the Mark IV rotary brush system is designed for the toughest of materials that demand the cleanest of printing surfaces.

Standard features include a canister collector with cartridge filter, pre-filter and motor starter, Ion-O-Vac head with rotary brush, drive and speed motors and controls, static eliminator and brackets.

Options

- Single or double surface cleaning arrangements
- Micrometer Adjustment to adjust the position of head in relation to the impression cylinder or roller

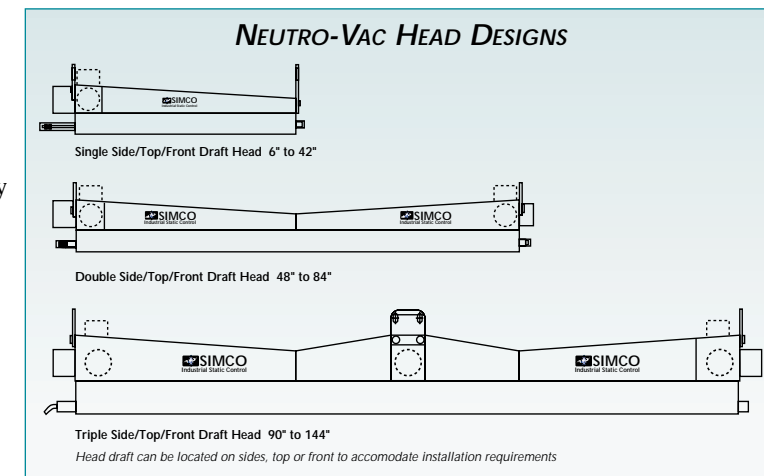


The Neutro-Vac® Web Cleaner System

The Neutro-Vac can remove particulate down to 20-microns. Neutro-Vac heads combine the power of a compressed air blast, static eliminator and a high exhaust head to agitate the web, remove the static bond and evacuate the surface particulate. Tapered air intake design provides aerodynamic suction, allowing the Neutro-Vac heads to vacuum the air up to three inches before and after the head intake.

The Neutro-Vac has been the choice of converters for over fifteen years. These systems are ideal for installation over unsupported webs from 3" to 300" wide. No adjustment is required to accommodate a change in web width due to the characteristics of the Neutro-Vac head design. These systems are also designed with low-maintenance in mind.

Converting applications in many industries have incurred the benefits and reduced costs associated with the application of the Neutro-Vac system. For example, a national manufacturer of pre-preg circuit board material saved \$300,000 annually, with an ROI of less than 3 months, by installing a Neutro-Vac system. (continued on back)



The Neutro-Vac (Continued)

Neutro-Vac systems have successfully been used in critical clean applications such as medical film, coating and laminating, holographic printing, reflective tape, and flexible packaging and trays for the food and beverage industries.

Removing slitter dust, paper lint, and other web contaminants in converting operations are standard applications for the Neutro-Vac.

Standard features include a cabinet enclosed HEPA cartridge filter with automatic filter cleaning at shutdown, motor starter, high exhaust Neutro-Vac head with static eliminators, air tube and mounting flanges.

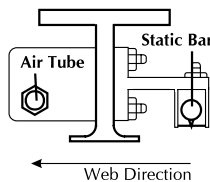
Options

- Single or double surface cleaning arrangements
- Contact, Non-Contact and Explosion-Resistant configurations
- Delicate Material Guards can be installed on the head intake to prevent especially lightweight material from being pulled into the head
- Pneumatic Lift is available to lift the head out of the way during web threading or equipment maintenance
- Vacuum Monitoring System including photohelic and magnahelic gauges
- HEPA after filter
- Chamber silencer
- Bag collector with foot operated filter cleaner

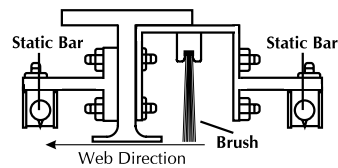
Contact Simco Industrial Static Control now for a free survey from your local factory representative. Ion-O-Vac and Neutro-Vac systems will provide excellent return on investment and solve your web and sheet cleaning problems.



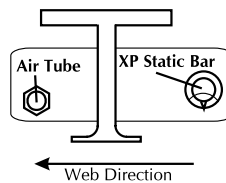
NEUTRO-VAC INTAKE CONFIGURATION OPTIONS



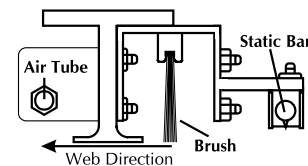
Configuration 1
Non-Contact with Static Bar and Air Tube



Configuration 2
Contact with Static Bars and Brush



Configuration 3
Explosion-Resistant Design



Configuration 4
Contact with Static Bar, Brush and Air Tube

Benefits of Static Elimination

Elimination of the static charges during the web cleaning process can provide additional benefits at the delivery and rewind. Reduced static charges mean less attraction of particulate in the converting process. This means less ingrained particulate at the rewind, providing for improved material quality to your customers. Additional benefits include improved equipment performance in folding, stacking and laminating of materials.

Continuous Cleaning Collector

The Neutro-Vac system's optional Continuous Cleaning Collector features automatic filter cleaning by regulated reverse flow air blasts. The result is consistent high performance in high dust areas without continuous stops for filter maintenance.

Features

- Continuous reverse air pulse cleaning process
- Runs at peak efficiency at all times
- Lower operating cost and longer filter life
- Filter efficiency, 99.99% on submicron dust

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