

WORLDWIDE LEADERS IN STATIC CONTROL



INDUSTRIAL PRODUCT CATALOG



[www.simco-static.com](http://www.simco-static.com)

## Table of Contents

<b>Static Basics</b>	<b>2</b>
<b>Electrostatic Fieldmeter</b>	<b>3</b>
<b>Static Neutralizing Systems</b>	
PerforMAX® IQ	4
PerforMAX® IQ HL	8
<b>Static Neutralizing Bars</b>	
PerforMAX® Easy	10
R50 Blue Bar®	10
MEB	11
One Point	11
Applications	12
<b>Ionizing Nozzles &amp; Air Knives</b>	
Nozzles	13
Applications	14
Frequently Asked Questions	14
Curtain Transvectors	15
Magnum Force™ Air Knife System	16
<b>Ionizing Air Guns</b>	<b>17</b>
<b>Ionizing Air Blowers</b>	
Extended Range Ionizing Blowers	19
Applications	21
<b>Power Supplies</b>	
Compatibility Chart	22
Frequently Asked Questions	23
Standard Power Supplies	24
Hazardous Locations	26
<b>Electrostatic Charging</b>	
About Charging	27
Chargemaster® Power Supplies	28
Chargemaster® Applicators	29
Applications	31
<b>Web and Sheet Cleaning Systems</b>	
Neutro-Vac® Web/Sheet Cleaner	33
Ion-O-Vac® Web Cleaner	34
Rotary Brush Web Cleaner	35
Ion-O-Vac® Sheet Cleaner	35
Contact Cleaners	36
<b>Conveyostat® In-Line Ionizer</b>	<b>37</b>

### SIMCO Manufacturing Locations





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SIMCO Static Control is the unsurpassed leader in solving static control problems in a wide range of industries. Since 1936, SIMCO has distinguished itself by manufacturing innovative, high quality static control products and providing outstanding customer service and application expertise.

### SIMCO customers can rely on:

- Technical and application analysis available by phone or at your facility
- 24 hour shipping of stocked products
- Worldwide support through SIMCO's manufacturing locations in the United States, Holland and Japan
- Continuing commitment to new product development

### SIMCO Manufacturing/Sales Locations

#### *SIMCO World Headquarters, U.S.A.*

2257 North Penn Rd.  
Hatfield, PA 19440

Customer Service: ..... 215.822.6401  
Fax: ..... 215.822.3795  
Web: ..... [www.simco-static.com](http://www.simco-static.com)  
Email: ..... [customerservice@simcomail.com](mailto:customerservice@simcomail.com)

#### *SIMCO Europe*

Postbus 71  
Lochem, Holland NL-7240 AB

Telephone: ..... 31.573.288333  
Fax: ..... 31.573.257319  
Web: ..... [www.simco.nl](http://www.simco.nl)  
Email: ..... [general@simco.nl](mailto:general@simco.nl)

#### *SIMCO Asia*

1-2-4, Minatojima Nakamachi  
Chuo-Ku Kobe-City, Japan 650-0046

Telephone: ..... 81.78.303.4651  
Fax: ..... 81.78.303.4655  
Web: ..... [www.simco.co.jp](http://www.simco.co.jp)  
Email: ..... [info@simco.co.jp](mailto:info@simco.co.jp)

### SIMCO Sales Offices

#### *SIMCO Asia*

No. 1 Lane 208, Changchun 1st Rd.  
Zhongli City, Taoyuan Hsien 320  
Taiwan (R.O.C.)

Telephone: ..... 886.3.461.7177  
Fax: ..... 886.3.463.5457  
Email: ..... [asiasalesipd@simcomail.com](mailto:asiasalesipd@simcomail.com)

#### *SIMCO Australia*

23 Ashford Avenue  
Milperra, NSW, Australia 2214

Telephone: ..... 61.2.9772.3000  
Fax: ..... 61.2.9774.1223  
Email: ..... [ausalesipd@simcomail.com](mailto:ausalesipd@simcomail.com)

#### *SIMCO Latin America*

Rua Peixoto Gomide 724  
Sao Paulo, SP 01409-000 Brazil.

Telephone: ..... 55.11.3266.6854  
Fax: ..... 55.11.3266.6853  
Fax (Miami, FL): ..... 305.675.2353  
Email: ..... [lasalesipd@simcomail.com](mailto:lasalesipd@simcomail.com)

## Static Basics

### What is Static?





The word “static” means “stationary”. Static electricity is a stationary electrical charge. In an atom, positively charged protons are balanced by negatively charged electrons. Losing or gaining electrons affects the charge. When large numbers of atoms lose or gain electrons, a noticeable electrostatic charge is created.

The surfaces of non-conductors and isolated conductors are susceptible to the creation of static charges. Conductors differ from insulators in how easily a static charge moves or is “conducted”. When an electrically isolated conductor becomes charged, grounding the conductor can neutralize it by allowing the charge to flow to ground. Insulators do not allow charges to move freely, so grounding is not sufficient to eliminate static. Use of an active ionizer is the only way to reliably eliminate static on insulators.

Many industrial materials are insulators, such as rubber, glass and plastics. Their desirable qualities make them essential to use, however, they are likely to become electrostatically charged during processing. These processes include:

- Peeling laminate
- Unwinding a roll
- Separating surfaces
- Wind-up operations
- Collecting products in bins

Production jams, quality problems, dirt attraction and rejects are all consequences of uncontrolled static.

INSULATORS VS. CONDUCTORS	
INSULATORS	CONDUCTORS
 <p>A charged insulator can remain charged for many hours. Opposite polarity charges can exist on an insulator at the same time.</p>	 <p>Charge of one polarity can remain on a conductor as long as it is isolated from ground.</p>
 <p>Charges will not migrate on insulators. Grounding insulators neither removes nor prevents surface charges.</p>	 <p>A charged conductor will discharge completely when grounded.</p>

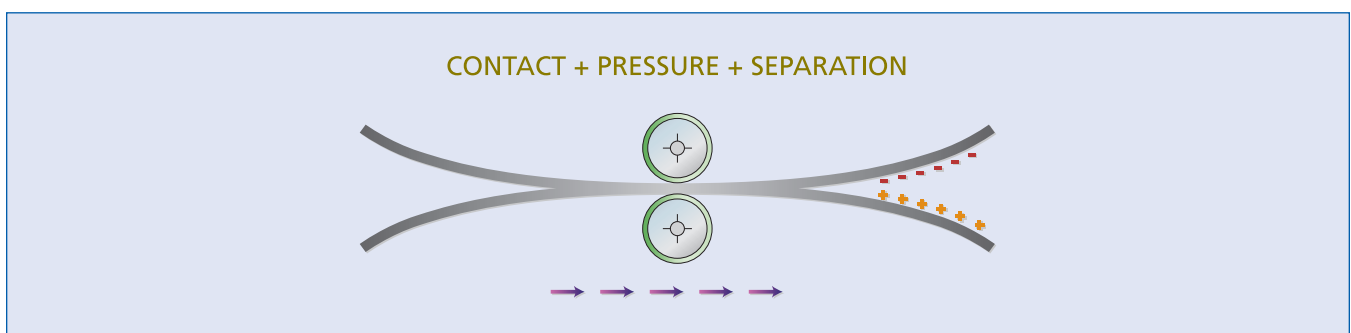
*Only an ionizing static eliminator can neutralize a non-conductive material. If an ungrounded conductor becomes charged, it can be neutralized by simply connecting it to an earth ground. Electrons do not move freely on insulators, even if they are grounded. Because of this, the only reliable way to neutralize an insulator that has become charged is to use an active static eliminator.*

### How is Static Generated?

Static electricity is a surface phenomenon and results when two or more surfaces are in intimate contact with each other and then are separated. During contact, surface electrons, which are negative, migrate from one surface to the adjacent surface. When the surfaces separate, the surface that gains the electrons becomes negatively charged, the surface giving them up becomes positively charged.

The magnitude (field intensity) of the charge is dependent on many factors such as type of material and their physical and electrical

characteristics, temperature and humidity, contact pressure and speed of separation. Typically, the greater the pressure and speed of separation, the higher the charge. Static charges tend to be higher during winter months due to lower ambient humidity. When humidity is high, materials such as uncoated paper tend to absorb moisture, making the surface semiconductive, allowing some of the charges to flow to ground.



*Friction, pressure and separation are the major causes of static electricity.*

## Triboelectric Series and Electrostatic Fieldmeter



The Triboelectric Series chart shows the relative positive or negative charge of various materials.

### FMX-003



#### Description

The FMX-003 fieldmeter is a compact electrostatic fieldmeter used to accurately locate and measure static charges. Its pocket size makes it handy to use and three-button operation makes it easy to operate.

The FMX-003 measures both positive and negative polarity charges up to  $\pm 22\text{kV}$  (22,000V) at a distance of 1". Results are simultaneously displayed numerically and in bar graph format. The FMX features push button operation and the HOLD button allows the display to retain the static charge reading. This is especially useful where display is difficult to see during measurement.

#### Specifications

Display Features	Push button POWER, HOLD, ZERO and Ion Balance operation
Read Out	Bar graph - Red LCD for positive polarity voltage; Blue LCD for negative polarity voltage; Battery capacity and error display indicators
Measurement Capability	Measuring Range: 0 to $\pm 1.49\text{ kV}$ (low range); $\pm 1.0\text{ kV}$ to $\pm 22.0\text{ kV}$ (high range); 0 to $\pm 220\text{ V}$ (ion balance measuring range)
Measuring Distance	1" $\pm 1/64$ " (25mm $\pm 0.5\text{mm}$ ); LEDs guide for correct distance (between charged object and fieldmeter)
Power	9 V, 6F22Y manganese battery
Size	4 7/8" x 2 7/8" x 1" ( L x W x D) 123mm x 73mm x 25mm ( L x W x D)



## Static Neutralization System — PerformMAX IQ®



### Description

The PerformMAX IQ is an intelligent air ionization system that enables the user to be in charge of static electricity. It is designed to efficiently neutralize electrostatic charges on films, paper, non-wovens and fabric in web or sheet form.

### Features

- Efficient neutralization with ranges up to 30 inches and web speeds to 3,000 feet per minute
- Full communication interface capability via PC or PLC
- Downstream web charge identification for complete quality control
- Also available in a Hazardous Location version



### PerformMAX IQ Static Bar

The rugged PerformMAX IQ static bars are tailored to the application.

- Speed bars are optimized to operate on high speed webs at distances 2" to 9" [50mm to 230mm]
- Distance bars operate at extended ranges from 12" to 30" [300mm to 760mm] from the web surface
- Hybrid bars are optimized to operate at 6" to 18" [150 to 460mm] on webs where the web path is somewhat variable



**See Product Application  
on Page 12**

### Specifications

Max. Operating Voltage	+/-12kV
Overall Bar Length	
Speed Bar	300mm to 3960mm [11.8" to 155.9"]
Hybrid Bar	720mm to 3960mm [28.3" to 155.9"]
Distance Bar	1350mm to 3870mm [53.1" to 152.4"]
Profile Dimensions	24mm W x 38mm H [0.94"W x 1.50"H]
Weight	1.2g/mm [0.07 lb/in]
Operating Temperature	Temp. 80°C [176°F]
Maximum Humidity	70% RH, no dewing permissible
Housing	Glass-fiber-reinforced polyester
Connection	1/2" NPT male thread at end of bar for metal conduit
HV Conduit	Flexible nylon tubing, black
Operating Distance	
Speed Bar	50mm to 230mm [2" to 9"]
Hybrid Bar	150mm to 460mm [6" to 18"]
Distance Bar	300mm to 760mm [12" to 30"]
Installation Hardware	Plastic mounting brackets, metal perforated strips and stainless steel hardware

# Static Neutralization System — PerformMAX IQ®



## PerformMAX IQ Basic Power Supply (BPS)

The Basic Power Supply (BPS) is the heart of the PerformMAX IQ system because it not only provides the high voltage output power producing ionization, but the BPS also processes all of the system intelligence to maintain and communicate complete static control. Patent Pending features include auto-calibration and dual-axis feedback control. Indicators on the power supply display system status, power, service status, and fault conditions.

### Specifications



Input Power	24VDC, 1.5A from AC adapter
Output Voltage	+/-7kV "Speed Bar" +/-8kV "Hybrid Bar" +/-12kV "Distance Bar"
Dimensions	202mm (L) x 123mm (W) x 106mm (H) [7.95" (L) x 4.84" (W) x 4.17" (H)]
Weight	1.94 kg [4.28 lbs.]
Max Operating Temp	43°C [110°F]
High Voltage Connectors	2 proprietary PerformMAX IQ static bar outlets



## PerformMAX IQ Web Monitor & Probe

The optional PerformMAX IQ Web Monitor Module is an innovative tool used to install a closed-loop, total control, ionization system in a production environment. The downstream charge recognition enables the IQ to maintain maximum performance, and also display that performance to the end-user. The web monitor is capable of powering up to 4 sensor probes on each monitor, and has programming capabilities that allow the sensors to be mounted at 1", 2" or 3" from the surface. The web monitor also has a programmable alarm feature that allows the operator to set the alarm threshold for each individual probe. This quality based product puts the operator in control of static electricity.

### Web Monitor Specifications



Input Power	24VDC, 0.25A from PerformMAX IQ (BPS) system
Probe Quantity	Total 4 probes maximum/BPS
Dimensions	202mm (L) x 123mm (W) x 106mm (H); [7.95" (L) x 4.84" (W) x 4.17" (H)]
Weight	1.12 kg [2.48 lbs.]
Max Operating Temp	43°C [110°F]
Housing	Aluminum, black epoxy powder coated

### Probe Specifications

Operating Distance	25mm [1"], 50mm [2"], 75mm [3"] firmware selectable
Installation Location	Downstream of IQ static bar
Input Power	from PerformMAX IQ Web Monitor
Purge Connection	1/4" tube quick connect
Purge Flow	0.85 m3/h [0.5 cfm] to 5.0 m3/h [3.0 cfm], (1 psi max) clean, dry air
Dimensions	110mm (L) x 35mm (W) x 37mm (H); [4.33" (L) x 1.38" (W) x 1.46" (H)]
Weight	0.22 kg [0.48 lbs.]
Max Operating Temp	43°C [110°F]
Housing	Aluminum and Stainless Steel
Communication Cable Length	50 ft., can be cut to length during installation

## Static Neutralization System — PerformMAX IQ®



### PerformMAX IQ Splitter Box

The Splitter Box offers the opportunity to maximize the potential of the PerformMAX IQ system, providing the capability to operate up to four bars (MAXIMUM 2 splitter Boxes/BPS) on the same BPS power supply. The addition of the Splitter Box not only enables you to add more bars to the power supply but will also allow you to deal with those difficult applications where cable length or load restrictions are a problem.

#### Specifications

Weight	1.5 lb (.7kg)
Dimensions	5.7" W x 2.3" H x 3.3" D (145mm W x 60mm H x 85mm D)
Enclosure Material	Flame retardant ABS
Cable Length	10 ft (3m)



### PerformMAX IQ Remote Monitor

The PerformMAX IQ system also offers an optional Remote Monitor that displays real-time key operating conditions of the IQ bars, such as a fault or clean bar. In one simple to view display, the remote monitor has the ability to hook up to 12 basic power supplies, saving time and simplifying maintenance.

#### Specifications

Weight	.65 lb (.29 kg)
Dimensions	4.40" x 7.70" x 1.25" (110mm W x 196mm H x 32mm D)
Enclosure Material	Impact resistant ABS
Cable Length	Interface to Remote Monitor 120" Power Supply to Interface 300"



### PerformMAX IQ Communication Module

The optional PerformMAX IQ Communication Module creates a remote computer interface link between the IQ system and a PLC or PC, to provide a comprehensive real-time summary of performance and system alarm data. Ideal for those users that require a historical record for lot control or customer review if requested. The module can be configured to utilize system supplied software or a number of fieldbus communication protocols such as Profibus, EtherNet or Modbus as examples.

#### Specifications

Input Power	24VDC, 1.0A from PerformMAX IQ (BPS) system/AC adapter
Communication Module	Anybus CompactCom, call Simco for available protocols
Dimensions	202mm (L) x 123mm (w) x 55mm (H); [7.95" (L) x 4.84" (W) x 2.16" (H)]
Weight	0.77 kg [1.70 lbs.]
Max Operating Temp	43°C [110°F]
Housing	Aluminum, black epoxy powder coated



## Static Neutralization System — PerformMAX IQ®





### PerformMAX IQ Limited Power Supply (LPS)



























The Limited power supply (LPS) provides microprocessor controlled high voltage DC output to the static bar. The high voltage causes the ionizing pins on the static bar to generate positive and negative ions. The Limited power supply is for use with Speed bars only. Optional IQ modules are not compatible. Patent pending one-push calibration simplifies set-up.

#### Specifications

Input Power	24V, 1.6A from AC adapter
Output Voltage	+/-7kV "Speed Bar"
Dimensions	202mmL x 123mmW x 106mmH [7.95" L x 4.85" W x 4.17" H]
Weight	1.89 kg [4.17 lb]
Max. Operating Temp	43°C [110°F]
Housing	Steel, black epoxy powder coated
High Voltage Connectors	2 proprietary PerformMAX IQ plug-in outlets

## PerformMAX IQ Selection Guide

-  = Components mounted outside of the classified location (HL)
-  = Components mounted inside of the classified location (HL)

	LPS	BPS	HLPS	HLCPS
<b>IQ - Speed</b>				
<b>IQ - Hybrid</b>				
<b>IQ - Distance</b>				
<b>IQ - HL - Speed</b>				
<b>IQ - HL Hybrid</b>				
<b>Web Monitor</b>				
<b>Web Monitor Probe</b>				
<b>Splitter Box</b>				
<b>IQ Remote</b>				
<b>Communication Module (PC)</b>				
<b>Communication Module (PLC)</b>				
<b>Junction Box</b>				
<b>Remote Display Monitor (RDM)</b>				

## Static Neutralization System — PerformAX IQ® HL

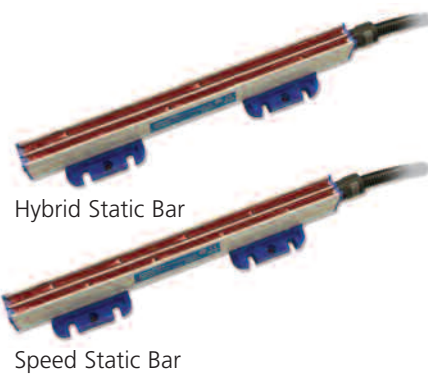


### Description

The PerformAX IQ HL is an intelligent air ionization system that enables the user to be in charge of static electricity. It is designed to efficiently neutralize electrostatic charges on films, paper non-wovens and fabric in web or sheet form.

### Features

- Approved for Class 1, Division 1, Group D Environment
- High output long range ionization is ideal for unwind and rewind rolls
- Efficient neutralization with ranges up to 18" and web speeds up to 3,000 feet per minute
- Communication Module: with computer interface and software or fieldbus network capability for remote monitoring and performance logging
- Web Monitor: for downstream static charge identification and closed-loop system control with multiple probe capability



Hybrid Static Bar

Speed Static Bar

### PerformAX IQ HL Static Bar

The rugged PerformAX IQ HL static bars are tailored to the application. Speed bars are optimized to operate on high speed webs at distances 2" to 9" [50mm to 230mm]. Hybrid bars are optimized to operate at 6" to 18" [150 to 460mm] on webs where the web path is somewhat variable. Each static neutralizing bar features current limiting at each individual ion emitting pin to minimize the risk of hazardous electrical shock if the bar is touched while in operation or to eliminate the risk of explosion in specific classified areas.

### Specifications



Max. Operating Voltage	+/-12kV
Overall Bar Length	
Speed Bar	300mm to 3960mm [11.8" to 155.9"]
Hybrid Bar	720mm to 3960mm [28.3" to 155.9"]
Profile Dimensions	24mm W x 38mm H [0.94"W x 1.50"H]
Weight	1.2g/mm [0.07 lb/in]
Operating Temperature	Temp. 80°C [176°F]
Maximum Humidity	70% RH, no dewing permissible
Housing	Glass-fiber-reinforced polyester
Connection	1/2"NPT male thread at end of bar for metal conduit
HV Conduit	Flexible nylon tubing, black
Emitter Spacing	
Speed Bar	30mm [1.18"]
Hybrid Bar	90mm [3.54"]
Operating Distance	
Speed Bar	50mm to 230mm [2" to 9"]
Hybrid Bar	150mm to 460mm [6" to 18"]
Installation Hardware	Plastic mounting brackets, metal perforated strips and stainless steel hardware (screws, nuts and washers)

## Static Neutralization System — PerformMAX IQ® HL



See PerformMAX IQ Optional Modules on Page 6

### PerformMAX IQ HL & HLC Power Supply

There are two power supply choices for the PerformMAX IQ HL system. Both Power Supplies are the heart of the PerformMAX IQ HL system because it not only provides the high voltage output power producing ionization, but they also process all of the system intelligence to maintain and communicate complete static control. Patent Pending features include auto-calibration and dual-axis feedback control. Indicators on the HL power supply display system status, power, service status, and fault conditions for mounting outside the hazardous area. While the HLC power supply is approved for mounting inside classified hazardous locations. Through the use of the required remote display monitor you can calibrate with the touch of a button and also view all critical indicators such as service status and fault conditions.

#### HLC Specifications

Input Power	24VDC, 1.5A from AC adapter
Output Voltage	+/-7kV "Speed Bar" +/-8kV "Hybrid Bar"
Dimensions	388mmL x 235mmW x 159mmH [15.25" L x 9.25" W x 6.25" H]
Weight	14.5 kg [32 lb]
Max Operating Temp	43°C [110°F]
Housing	Cast aluminum

#### HL Specifications

Input Power	24VDC, 1.5A from AC adapter
Output Voltage	+/-7kV "Speed Bar" +/-8kV "Hybrid Bar"
Dimensions	202mm (L) x 123mm (W) x 106mm (H); [7.95" (L) x 4.84" (W) x 4.17" (H)]
Weight	1.94 kg [4.28 lbs.]
Max Operating Temp	43°C [110°F]
High Voltage Connectors	2 proprietary PerformMAX IQ static bar outlets



#### Junction Block

The junction block provides an intermediate connection point for hazardous location installations of the PerformMAX IQ HL. The junction box allows quick disconnect capability for equipment service or replacement, without having to remove the entire electrical wire/conduit installation.

The junction box is approved for Class 1, Division I, Group D; Class II, Division I, Groups F and G and Class III, Division I hazardous locations.

#### Specifications

Dimensions	96mm W x 145mm L x 76mm H [3.8" W x 5.7" L x 3.0" H]
Weight	0.72 kg [1.6 lb]
Operating Temperature	0° - 80°C [32° - 176°F]
Housing	Copper-free Aluminum with epoxy powder coat
Connection	½" NPT female threads in the body each side
Installation Hardware	(4) # 8 insulated ring terminals, (2) #8 screws with internal lock washers and (2) #8 internal lock washers.
"Y" Sealing Fitting	ADALET XY-2 25% Fill
Connection	½" NPT female threads in the body each side
Packing Fiber	ADALET ADACO XAF-6
Sealing Cement	ADALET ADACO No.1

## Static Neutralizing Bars

### PerforMAX Easy



#### Description

The rugged Performax Easy static neutralizing system, with reinforced profile offers superior performance. The Performax Easy has an integrated high voltage power supply and requires only a low voltage input of 24V DC. It is equipped with a standard 5 pin M12 connector for the 24V DC input.

A two color LED bar ON (green) or bar FAULT (red). The Performax Easy bar is IP66 rated for easy cleaning. Universal mounting brackets are supplied for various mounting options.

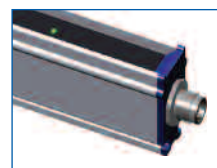
#### Features

- Incorporated high voltage power supply, with 24V DC input
- Standard M12 connector, straight or angled
- Rugged fiber-reinforced polyester extrusion
- Designed for industrial use and easy cleaning

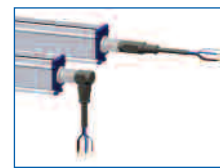
#### Specifications



Working distance	Max. 18" (455 mm)
Housing material	fiber-reinforced polyester
Ionization point	special alloy
Cable	low voltage
Connector	M12
Weight	1.25 kg/m (2.75 lbs)
Ambient temperature	0 - 55°C (31 - 131°F)
Approval / Protection classification	CE / IP 66 / Pending UL
Suitable power supply	integrated, 24V DC voltage input

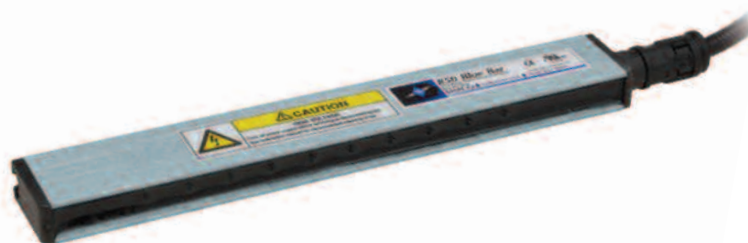


Two color signal LED



Connector, straight or angled

### R50 Blue Bar



#### Description

The R50 Blue Bar is a high efficiency, shockless static bar for use on high-speed webs and in hard-to-reach applications. The Blue Bar neutralizes static charges on webs at speeds to 2,500 fpm. Also available as a moisture resistant model.

#### Features

- Patented Insulated Ground Conductors
- Resistor Coupled for Shockless Operation
- Passive Neutralization
- Shielded Cable
- Easy to Clean One Channel Design
- 2" to 6" effective range

#### Specifications



Bar Profile	.63" x 1.25" (16mm x 32mm)
Effective Length	5.3" to 153.5" (135mm to 3900mm)
Overall Length	8.7" to 156.9" (220mm to 3985mm)
Operating Voltage	7kV AC
Mounting	Nylon bolts and metal brackets provided
Ambient Temperature	32°F to 176°F (0°C to 80°C)
Connection and High Voltage Cable	Fixed cable at the bar; 7.0' (2.1 meters) standard length, optional lengths available

#### Blue Bar Options



##### L50 Air Tube:

The L50 attaches to the Blue Bar and is available with 90° or 28° air exits.

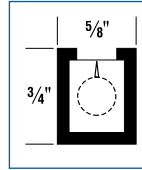
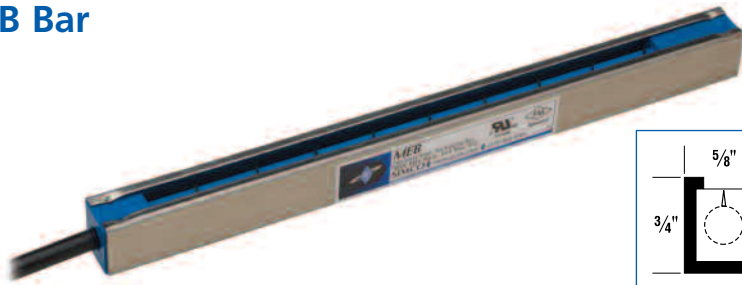


##### On Indicator:

The On Indicator is an affordable, fast and easy verification that your Blue Bar is operating properly.



## MEB Bar

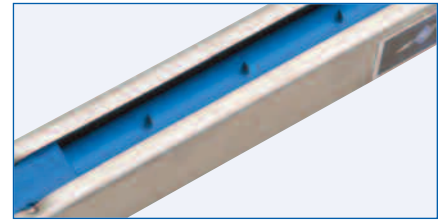


### Description

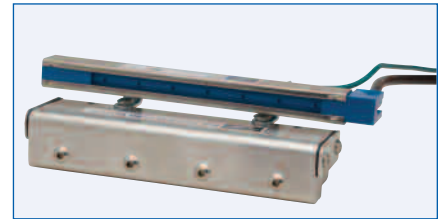
The MEB static bar is a very efficient and versatile static eliminator used in a wide variety of applications. Its' small size and ability to fit in tight spaces, makes it a favorite of machine builders. The MEB bar is also available with additional studs and right angle cable exit for ease of installation.

### Features

- Shockless operation
- Stainless steel construction
- Maximum overall length to 144" and effective length of 141"
- Effective for web speeds up to 1200 ft/min
- Mounting of 1" to 3" from target surface
- Rugged stainless steel construction



Closeup of Emitter



MEB shown with Curtain Transvector

### Specifications



Housing	Stainless steel
Inner Bar	PVC
Emitters	302 Stainless steel
Effective length	6" to 141" (152 – 3581 mm)
Overall Length	8.5" to 144" (215 – 3657 mm)
Mounting Distance	1" to 3" from target surface
Maximum Speed (FPM)	1200 FPM
Power Supply	F167, F267, D167Q, D167RY, D257Q, N167 or N267



See Compatible Power Supplies on Page 22

## One Point



### Description

Shockless one-point ionizer is designed for spot neutralization and for applications with hard to reach static charges.

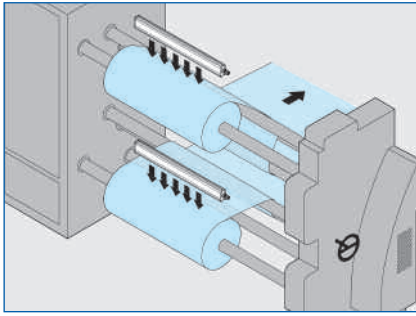
### Typical Use

**Converting:** Ribbon slitting and tape rewind operations.

### Specifications

Length:	2.5" (.4375" diam.)
Housing:	Chrome-plated brass
Points:	302 stainless steel
Power Supplies:	S165S, S265S

## Static Neutralizing Bars - Applications

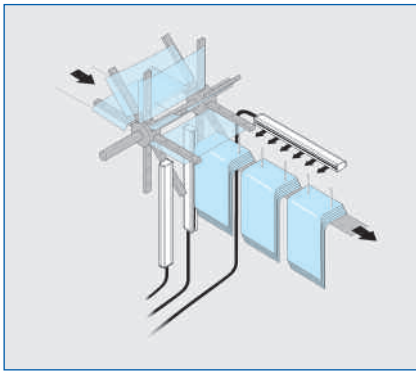
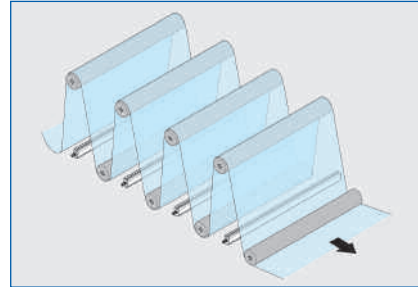


### High Speed Web

Installing a static bar on a high speed web neutralizes high levels of static charge up to 2500 feet per minute and more, reducing product defects and operator shock.

### Accumulator

When static charges build on an accumulator, the web attracts to itself and causes problems. Installing a static bar between the folds of the web neutralizes these charges.

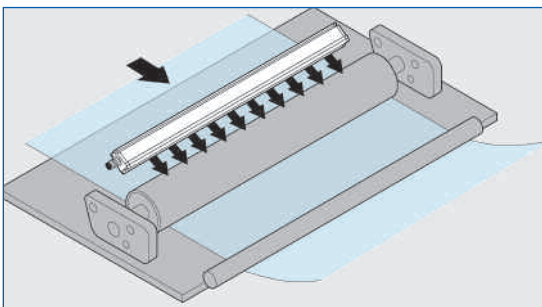
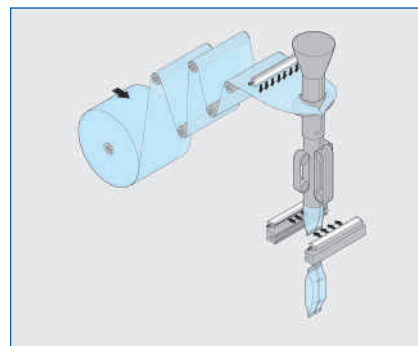


### Wicketer

A static bar installed on a wicketer can eliminate poor stacking of bags, which increases production yields and reduces rejects.

### Form, Fill & Seal

Vertical form, fill & seal operations often result in rejects of the finished package due to a contaminated seal. Static bars positioned just below the tube neutralizes the film, resulting in a clean seal.



### Static from a Roller

Particulate is attracted to a charged rubber roller causing impressions from the contaminant that is transferred to the paper. A static bar installed facing the roller neutralizes the charge.



Perforated Configuration



Spray



Slotted Configuration



Stream

## R55 Nozzle

The R55 nozzle is shockless and is available in two air exit configurations, a slot or a double row of perforated holes.

The cable for the R55 is metal shielded, which reduces EMI and RFI emissions and allows the cable to be mounted against metal without danger of burn-out. Available in a straight and right angle mounting.

### Typical Use

Printing: Provides exceptional performance in fanning and separating paper and film on feed piles.

### Specifications



Line Voltage Requirements	120V, 60 Hz; 230V, 50/60 Hz
Size (Individual Nozzle)	2.13" x 2" x 1" (L x W x H)
Maximum Air Pressure	88 psi
Air Flow (at 30 psi)	Slotted 2.45 SCFM, perforated 2.95 SCFM
Discharge Time	0.5 seconds at 6" at 30 psi (5000 V to 500 V)
Power Supplies	S165, S265



Spray

## HS Nozzle

Shockless pin-point ionizing air source designed to mount individually, in series, or mounted on a standard air header.

### Typical Use

Automotive/Converting/Plastics: Ideal for custom configuration around injection molded parts.

### Specifications



Profile	2.5" x .94" x 2.56" (L x W x H)
Maximum Pressure	100 psi (clean, dry air)
Air Flow	4.4 SCFM at 30 psi
Discharge Time	0.6 seconds at 6" at 30 psi (5000 V to 500 V)
Power Supplies	F167, F267 & D167QG



Stream

## HE Nozzle

Current limited, small profile pin-point ionizing air source designed to mount individually, in series, or mounted on a standard air header.

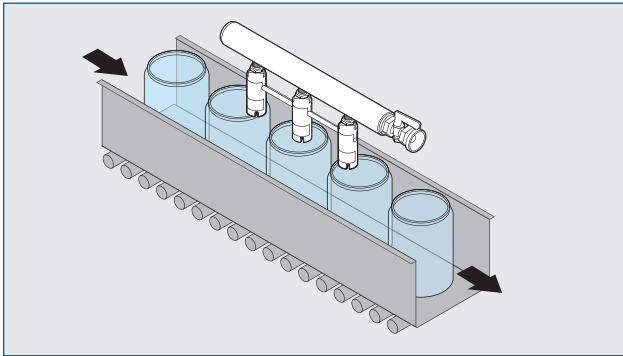
### Typical Use

Packaging: Neutralize plastic seals for pharmaceutical bottles to ensure perfect placement.

### Specifications

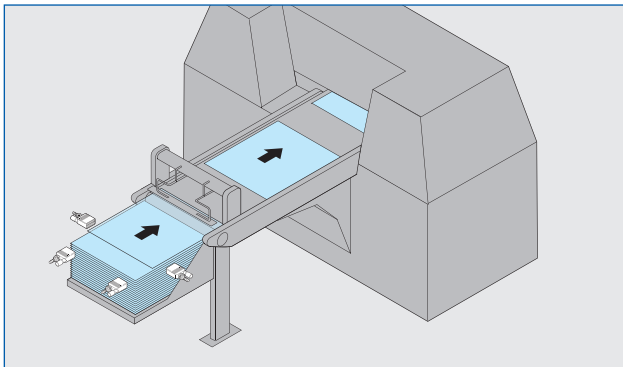
Profile:	2" (1" diameter)
Maximum Pressure	100 psi (clean, dry air)
Air Flow	2.8 SCFM at 30 psi
Discharge Time	0.7 seconds at 6" at 30 psi (5000 V to 500 V)
Power Supplies	D167Q, D257Q

## Ionizing Nozzles



### Static Control & Air for Bottle Cleaning

Using nozzles for bottle cleaning provides a highly efficient pin-point source of ionization to neutralize charges in very specific spots, often several inches away from the nozzle tip. At the same time, dust, dirt, and particulate are blown away from the targeted surface.



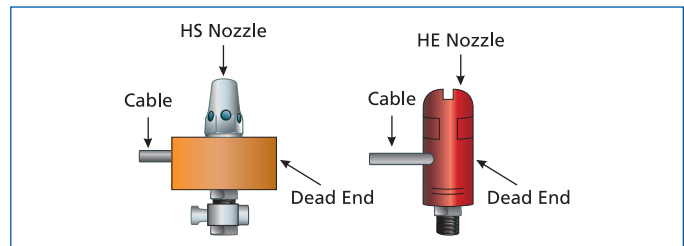
### Static Problems on Sheet Fed Presses

Mounting a nozzle at the top of a sheet fed press produces ionized air that flutters the sheets to prevent multiple sheet pick up and press jams.

## Frequently Asked Questions

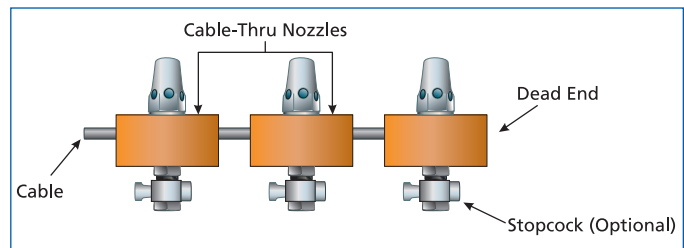
### Q What is a dead-end nozzle?

**A** Dead-end nozzles have an integral high voltage cable for connecting to a high voltage power supply. Dead-end nozzles are used for single nozzle applications and as the last nozzle of a series of HE and HS nozzles together on one cable.



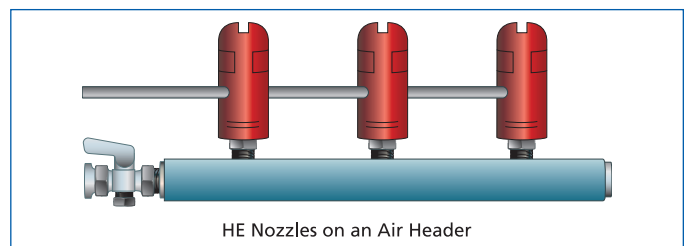
### Q What is a cable-thru nozzle?

**A** Cable-thru nozzles do not come with a high voltage cable. They are designed to be attached to the cable of a dead-end HE or HS nozzle.



### Q Can nozzles be run on a header?

**A** Yes, SIMCO can mount HE and HS nozzles on an aluminum air header bar, greatly simplifying installation.





## Curtain Transvector



### Description

Transvectors are highly efficient “air knives” or “curtains” of compressed air for superior blow off of dust and dirt. SIMCO’s transvector uses a patented technology which results in significantly less noise and less compressed air usage while outperforming other standard air knives. SIMCO’s transvector also has greater air amplification and a more uniform airflow.

Ionizing Curtain Transvectors provide an additional alternative to static bars when a powerful air curtain is desired for simultaneous cleaning and neutralizing of static charges. Operating on compressed air, the ionizing Curtain Transvector is designed to direct a stream or “curtain” of ionized air at a very specific area.

SIMCO Ionizing Curtain Transvectors are available with standard SIMCO static bars or SIMCO intrinsically safe static bars which are approved for Class 1 (Division 1, Group D) hazardous locations.

### Typical Use

**Finishing:** Eliminating dust, dirt and static charges from autobody surfaces prior to entering paint booth.

**Label Application:** Eliminates dust, dirt and static charges for better label placement and adhesion.

**Bottle Filling:** Eliminates dust from exterior of bottles.

**Injection Molding:** Ionized air directed into mold cavity causes parts to release.

### Static Bar Choices:

- MEB
- R50 (high output)
- PerformMAX IQ HL (high output, hazardous location)

### Specifications

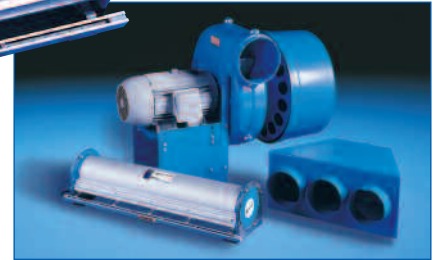
Unit Length	6", 12" and 24" in stock. Lengths to 84" available
Air Inlet Length	.25" NPT
HV Cable	10' standard length except R50 (7' cable)
Mounting	Transvectors may be mounted directly to air line or static bar mounting studs may be used on selected models
Air Requirements	<b>Air Input:</b> 10 psi (minimum) to 100 psi (maximum) clean, dry, oil free <b>Air Consumption:</b> 4.3 SCFM per inch at 80 psi
Power Supply	Based on static bar

## Ionizing Air Knives

### Magnum Force Air Knife System



**Magnum Force  
Air Nozzle**



#### Description

SIMCO's Magnum Force Air Knife Systems are custom-designed to provide superior heavy-duty surface cleaning or drying. When combined with SIMCO's static neutralizing bars, Magnum Force becomes a powerful tool for removing dust and dirt from flat or contoured surfaces. Where liquid removal is required, Magnum Force systems are ideal because of their powerful forced air thrust, low operating cost, and efficient operation.

The Magnum Force system is constructed of extruded aluminum with cast aluminum flanged ends. Aluminum air knife blades are adjustable, allowing control of the volume, velocity and distance of air movement. Each ionizing and liquid removal system is custom-engineered for the individual application.

#### Features

- Clean, dry, uniform air provides superior cleaning performance
- Adjustable air thrust blades provide flexibility of performance
- Anodized body with powder coated flanged ends for corrosion protection

#### Typical Use

**Finishing:** Remove dust from automobile bodies, automotive components and large appliances prior to painting. Dry parts prior to painting.

#### Static Bar Options

- SIMCO MEB static bar standard
- Optional Blue Bar for high output ionization
- Optional PerformMAX IQ HL static bar for hazardous locations

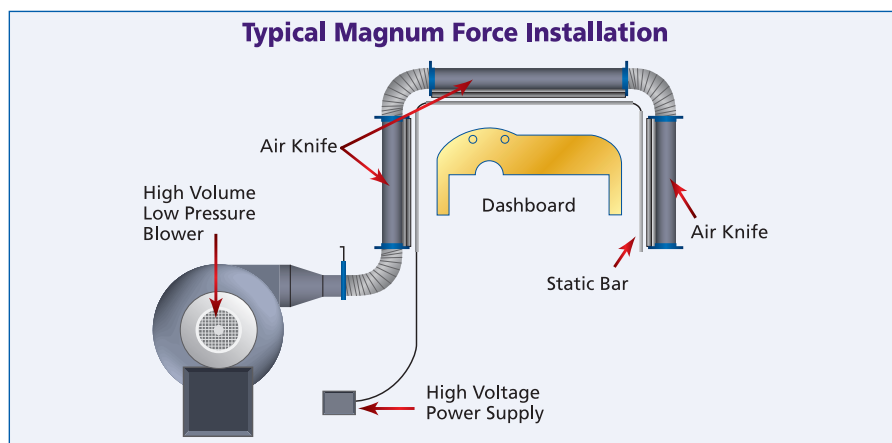
*Several sizes of direct or self-tensioning belt drive blowers available.*

#### Blower

- 208-230, 460 or 575 Volts, 50/60 Hz.; 3-phase; TEFC
- AMCA certified
- Silencer/Filter: 10 micron replaceable cartridge in coated steel casing

#### Specifications

Combined Length	Up to 400" in 6" increments. Custom sizes available.
Diameter	4" and 6"
Body	Anodized with powder coated ends
Air Requirements	<b>Air Input:</b> 10 psi (minimum) to 100 psi (maximum) clean, dry, oil free <b>Air Consumption:</b> 4.3 SCFM per inch at 80 psi
Power Supply	Based on static bar



*Magnum Force removes static and dust from plastic components such as dashboards, bumpers, and headlights.*

## TopGun™



Optical Sensor



Sidekick



Ionizing Thermoformed Trays

### Description

Top Gun features high blow-off force to provide efficient cleaning and rapid static discharge. All control functions are built into the gun for easy operator use: airflow control and a two-level LED to indicate both power on and ionization.

For automated assembly, all versions of the Top Gun are available with an optional Optical Sensor, which automatically activates the gun when an object is in range. The Optical Sensor has an "adjustable range" from 1" – 30".

The Sidekick flexible neck frees the operator's hands during assembly and manufacturing processes. A foot pedal controls both ionization and airflow, and the flexible gun mount allows the operator to focus the ionization airflow where it is needed. It includes a steel bracket for easy benchtop mounting.

### Specifications



Weight:	1.8 lbs (gun and 10' hose assembly)
Maximum Inlet Pressure:	100 psi clean; dry compressed air
Flow:	2.4 SCFM at 30 psi 4.6 SCFM at 60 psi 7.4 SCFM at 100 psi
Discharge Time:	1.0 seconds at 6" and 30 psi 0.5 seconds at 2" and 60 psi
Cable Lengths:	10' standard, 20' optional

### Features

- Inherent balance to  $\pm 15$  V
- Static dissipative lightweight handle
- Operates on either compressed air or nitrogen
- Adjustable airflow control (5 – 100 PSI)

## COBRA™



### Description

The COBRA static neutralizing blow-off gun provides a powerful blast of ionized air for cleaning and neutralizing large surfaces in rugged industrial environments. This lightweight, durable gun features an ergonomic handle to regulate blow-off force. An optional nozzle produces a fan-shaped air blast for covering large areas.

### Specifications

Weight	1.5 lbs (gun and 20' cable)
Maximum Inlet Pressure	100 psi clean, dry compressed air
Air Consumption	14 SCFM at 50 psi, 22 SCFM at 100 psi
Discharge Time	0.6 sec. at 6" and 100 psi (decay 5000 V to 500 V, 20 pf plate)
Cable Lengths	20' standard, 40' optional

## Ionizing Air Blowers

### Aerostat® PC



#### Description

Small, quiet, and lightweight, yet uncompromising in performance, Simco's Aerostat PC provides superior static discharge over a targeted work surface area. A built-in emitter point cleaner provides low maintenance. A variable speed fan produces an air volume of from 35 to 70 CFM. The PC covers a 305 mm (1') x 1525 mm (5') area.

#### Features

- Inherent balance to  $\pm 10$  V
- Built-in emitter point cleaner
- Variable speed fan
- Emitter points never need replacement
- Heater for comfort

#### Typical Use

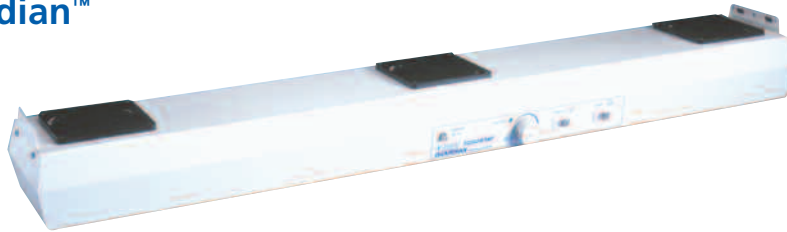
Plastics: Parts handling, profile extruding

#### Specifications



Power Requirements	120 VAC, 60 Hz 0.1 Amp (fan speed low, heater off) 1.7 Amp (fan speed high, heater on)
Size	5.5" x 8.63" x 3.25" (W x H x D)
Weight	5.3 lbs
Air Volume Output	35 CFM — 70 CFM
Effective Coverage	1' x 5' area

## Aerostat® Guardian™



#### Description

Installed above the work area, the Guardian provides fast static discharge over an entire work surface. It has adjustable air volume from 150 to 300 CFM.

The Guardian features inherent balance technology and a built-in emitter point cleaner.

#### Typical Use

Medical assembly packaging, Injection molding

#### Features

- Inherent balance to  $\pm 5$  V
- Built-in emitter point cleaner
- Integrated heater and task lights
- Emitter points never need replacement

#### Specifications



Discharge Time	6 sec. at 18 in
Power Requirements	120 V AC, 60 Hz
Air Volume Output	150 CFM to 300 CFM low to high Combined three-fan output
Size (W x H x D)	42.75



### Aerostat® Phoenix™



#### Description

SIMCO's Aerostat® Phoenix extended range ionizing blower provides optimum static charge neutralization for a wide variety of industrial applications. Designed to efficiently cover a wide area with an inherently balanced ion stream, the Phoenix ionizer is powerful and portable.

#### Features

- Extended range effective up to 10'
- Variable speed fan control
- Easily replaceable filters
- Point cleaner allows for easy maintenance
- Benchtop or portable floor stand
- High voltage indicator



*Phoenix with optional floor stand.*

#### Specifications

Power Requirements	120 V 60 Hz	
Current Draw	2.0 A (fan speed high)	
Weight	16.1 lbs	
Size	16.38" x 9.75" x 13.25" (WxHxD)	
Air Volume Output	Variable, approx. 110-300 cfm	
Effective Coverage	2' x 10' area	
Enclosure	Aluminum	
Airflow	Distance from Ionizer	FPM at Full Speed
	1'	2000
	2'	1250
	4'	800
	Measured at centerline of airstream	
Air Filter	Replaceable foam filter, 25 ppi	
Indicator	Status light ON when high voltage present at ionizing points	
Air Flow Audible Noise	68 dBA measured 2' in front of ionizer operating at high speed	
Maximum Operating Temp	32°F - 100°F	
Mounting (optional)	Pedestal 50" - 74" in 4" steps	

## Extended Range Ionizing Blowers

### Aerostat® Sentry™



#### Description

The Aerostat Sentry Ionizing Air Blower provides static charge neutralization in industrial assembly and production environments. Its airflow is particularly well suited for neutralizing charges on three-dimensional objects and in areas 3' x 6' wide.

#### Features

- Integrated power supply
- Patented, built-in ionizing point cleaner allows easy cleaning
- Easily removable air filter for fast maintenance
- Bench stand or optional pedestal mount

#### Typical Use

Plastics: Parts handling, profile extruding

#### Specifications



Power Requirements	120 VAC, 60 Hz, 0.9 Amp (fan speed high)
Size	15.38" x 4.5" x 8.13" (W x H x D)
Weight	17 lbs, 8 oz
Air Volume Output	70 CFM (low), 95 CFM (medium), 120 CFM (high)
Effective Coverage	3' x 6' area
Discharge Time	1.0 second at 1'; fan speed high (decay 1000 V to 100 V, 20 pf plate)

## HL Ionizing Blowers

### Aerostat® XP-20F™



#### Specifications



Power Requirements	120 VAC, 60 Hz, 1.3 Amps
Size	18.63" x 9" x 16.75" (W x H x D)
Weight	24 lbs, 8 oz
Air Volume Output	285 CFM
Effective Coverage	2' x 10' area
Discharge Time	0.9 seconds at 1'; fan speed high
Power Supplies	XP167, XP267, XPM167, XPM267

#### Description

The XP-20F Static Control Blower is approved for use in Class I, Division 1 and 2, Group D hazardous areas. This is the only blower available on the market with UL approval for use in hazardous areas. The XP-20F Static Control Blower can be powered by either the XP or by the XPM Power Supply. The XP Power Supply is approved for mounting within Class I, Division 1 and 2, Group D hazardous areas. The XPM power supply, which must be mounted outside the hazardous area, is approved for use in electrostatic finishing processes involving spray painting, dipping, coating, and liquid printing processes.

#### Features

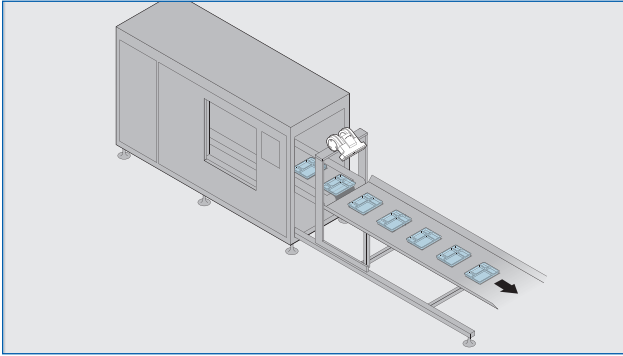
- Designed for use in rugged industrial environments as an intrinsically safe unit
- UL Listed for Class I, Division 1, Group D hazardous locations
- Supplied with air intake filter
- Connection to flexible or rigid metal conduit

#### Typical Use

Converting: Slitting and rewinding

Packaging: Container cleaning

## ***Ionizing Air Blowers – Applications***

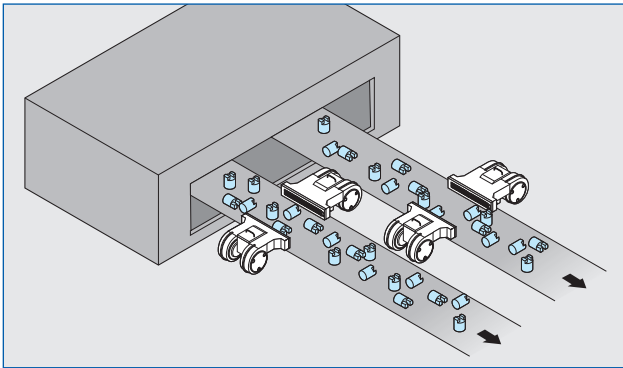
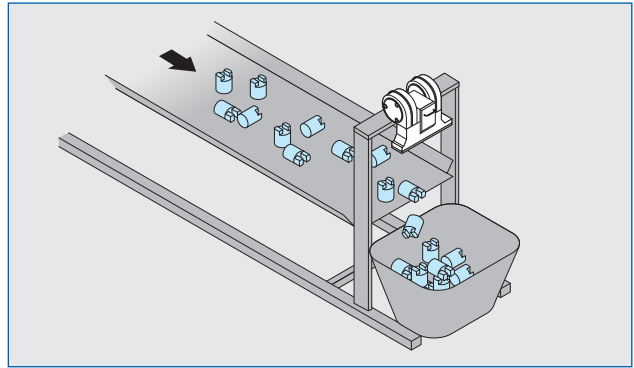


### **Cleaning Thermoformed Trays**

Thermoforming trays can attract dirt and contamination that results in rejects. Installing a static control blower directly above the delivery of the trays, offers improved product quality with the reduction of dust and dirt.

### **Injection Molding**

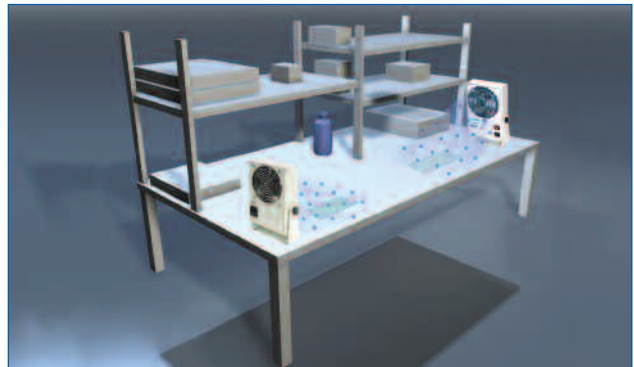
An ionizing blower provides the static neutralization needed to clean and remove airborne contaminants on injection molded parts as well as helping to reduce operator shocks.



### **Cleaning Plastic Parts**

Installing a static blower on a belt conveyor when cleaning plastic parts allows you to neutralize static charges, preventing reattraction of contaminants, and reduce rejects.

### **Benchtop Ionization**



## Power Supply Compatibility Chart

Some products have several compatible power supplies while other products must be used with only a specified power supply. This chart is a handy guide for matching power supplies with products. Call SIMCO Customer Service or your local representative if you need additional assistance in selecting the correct product and power supply for your application.

	120V	230V	Ports	Capacity
<b>Aerostat</b> XP-20F — hazardous area XP-20F — non-hazardous area	XP167 XPM167	XP267* XPM267	4 ports 4 ports	1 blower w/45' conduit 2 bowers w/40' conduit 3 blowers w/35' conduit 4 blowers w/25' conduit
<b>Guns</b> Cobra	G165	G265	2 ports	
<b>Nozzles</b> HS HS HE R55	F167  D167Q True AC True AC S165S*	F267 D257Q True AC True AC S265S*	2 ports 2 ports 2 ports 2 ports 4 ports 2 ports	100 nozzles 40 nozzles 100 nozzles 2 nozzles 4 nozzles 2 nozzles
<b>Static Neutralizing Systems</b> PerformMAX IQ PerformMAX IQ Limited     PerformMAX IQ HL	BPS LPS     HLPS HLCPS	BPS LPS     HLPS HLCPS		50" w/100' cable 100" w/90' cable 125" w/85' cable 150" w/80' cable 200" w/75' cable 250" w/60' cable 275" w/55' cable 300" w/50' cable 360" w/40' cable  50" w/90' cable 100" w/80' cable 125" w/75' cable 150" w/70' cable 200" w/60' cable 250" w/50' cable 275" w/45' cable 300" w/40' cable
<b>Static Bars</b> MEB   The Blue Bar, R50   One Point	F167 D167Q D167RY N167*  True AC True AC  D167Q N167*  F167 S165S*	F267 D257Q  N267*  True AC True AC  D257Q N267* N257*  S265S*	2 ports 2 ports 4 ports 4 ports  2 ports 4 ports  2 ports 4 ports 4 ports 2 ports 2 ports	200" EL 200" EL or 20' shielded cable 200" EL 300" EL  264" w/7' cable, 174" w/12' cable 264" w/7' cable, 174" w/12' cable  264" w/7' cable, 174" w/12' cable 264" w/7' cable, 174" w/12' cable 264" w/7' cable, 174" w/12' cable 132" w/7' cable, 60" w/14' cable
<b>In Line Ionizer</b> Conveyostat	DP1204	DP1204	2 ports 4 ports	

\*Lighted Power Switch

## Frequently Asked Questions

**N Power Supply**



**D, F, and S Power Supply**



### **Q How do power supplies work?**

**A** SIMCO power supplies are designed to be connected to a SIMCO static neutralizer to operate according to design specifications and to remain under warranty. Power supplies are offered in a variety of input and output voltages and mechanical configurations. Most SIMCO power supplies are UL listed (U.S.A.), CUL or CSA certified (Canada) and CE compliant (Europe).

Standard line voltage (120 or 230 VAC) is converted to an output of 4000, 6000 or 7000 VAC to enable the static control equipment to ionize air using high voltage discharge. In some cases, the power supply is directly integrated into the product. In the event of a direct short circuit to ground, the output current is limited to a maximum of 5mA.

Considerations for power supply selection include application and location, bar length, cable shielding and length, and number of connections.

### **Q What do SIMCO power supply model numbers signify?**

**A** The model number of a SIMCO power supply will tell you the required input and resulting output. The first numeric character indicates input voltage, the second numeral is Hz, and the third is output voltage.

For example, an F167 power supply is 120 VAC input, 60 Hz (some models are both 50 Hz and 60 Hz), and 7000 volts output. A D257Q is 230 VAC input, 50 Hz, and 7000 volts output.

### **Q How many outputs do SIMCO power supplies have?**

**A** Most power supplies come with two or four outputs, which accept standard SIMCO SLCC screw in connectors. This means they can accept two to four static eliminators, up to the maximum length of static bars which the power supply will power.

Power supply models that start with the letter "N" have an internal terminal block which requires that the static eliminator's cable be stripped and attached directly to the terminal block, rather than being attached with an SLCC connector.

### **Q What is the total maximum length of static bar(s) that can be attached to one power supply?**

**A** All power supplies have a limitation on the maximum number of inches of static bar which can be powered. The calculation of number of inches is based on the effective length of the static bars. For example, two twelve foot effective length bars (288 total inches) could be powered by an N167 power supply (300" maximum), but both bars could not be powered simultaneously by an F167 power supply (200" maximum). You would need two F167 power supplies, one for each twelve foot static bar.



## Standard Power Supplies



### PerforMAX IQ Basic Power Supply (BPS)

The Basic Power Supply (BPS) is the heart of the PerforMAX IQ system because it not only provides the high voltage output power producing ionization, but the BPS also processes all of the system intelligence to maintain and communicate complete static control. Patent Pending features include auto-calibration and dual-axis feedback control. Indicators on the power supply display system status, power, service status, and fault conditions.

#### Specifications



Input Power	24VDC, 1.5A from AC adapter
Output Voltage	+/-7kV "Speed Bar" +/-8kV "Hybrid Bar" +/-12kV "Distance Bar"
Dimensions	202mm (L) x 123mm (W) x 106mm (H) [7.95" (L) x 4.84" (W) x 4.17" (H)]
Weight	1.94 kg [4.28 lbs.]
Max Operating Temp	43°C [110°F]
High Voltage Connectors	2 proprietary PerforMAX IQ static bar outlets

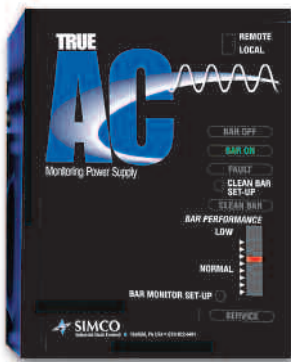


### PerforMAX IQ Limited Power Supply (LPS)

The high voltage limited power supply module provides microprocessor controlled high voltage DC output to the PerforMAX IQ Speed bar. The high voltage causes the ionizing pins on the static bar to generate positive and negative ions. The Limited power supply is for use with the Speed bars only. Optional IQ modules are not compatible. Patent pending one-push calibration simplifies set-up.

#### Specifications

Input Power	24V, 1.6A from AC adapter
Output Voltage	Limited Power Supply +/-7kV "Speed Bar"
Dimensions	202mmL x 123mmW x 106mmH [7.95" L x 4.85" W x 4.17" H]
Weight	1.89 kg [4.17 lb]
Max. Operating Temp	43°C [110°F]
Housing	Steel, black epoxy powder coated
High Voltage Connectors	2 proprietary PerforMAX IQ plug-in outlets



### True AC

The TrueAC is designed to operate with the R50 Blue Bar to provide consistent static neutralization of materials traveling at speeds up to 2,500 feet per minute, while also monitoring and controlling the equipment. When the system is activated the BAR ON indicator is illuminated to let you know that the system is ready to go. During operation the TrueAC power supply monitors the static bar while also displaying the BAR PERFORMANCE RANGE, and indicates when the static bar needs to be cleaned with the CLEAN BAR indicator light.

#### Specifications



Dimensions	162.56 mmL x 96.52 mmW x 114.3 mmH [6.4" L X 3.8" W X 4.5" H]
Input Power	4010442, 4010440 – 120 VAC 20 VA, 50/60 Hz 4010443, 4010441 – 230 VAC 20 VA, 50/60 Hz
Output Voltage	4010442, 4010443 – 7 kVAC 4010440, 4010441 – 5 kVAC
Output Current	3.0 mA maximum 5.0 mA short circuit

## Standard Power Supplies



### D167Q and D257Q

The D167Q can be used with the R50 Blue Bar and HE Nozzles. These power supplies can also be used with shockless static bars with shielded cable.

The D167Q is designed with short circuit protection (no fuse required!) which protects the power supplies in the event of a short in the static eliminator or cable. The unit is compact in size and built to perform in rugged manufacturing environments.

#### Specifications



Input Requirements	D167Q – 120V, 50/60Hz D257Q – 230V, 50/60Hz
Output Voltage	7 kV, 3mA max
Number of outputs for static eliminators	2
Max Length of static bars which can be attached	200"
Does the unit accept shielded cable	Yes
Acceptable for hazardous locations	No



### N167 and N267

The N167 (120V) and N267 (230V) are Simco's most versatile power supplies. They can be used with several shockless static bar models. A terminal block connector inside the power supply allows for the connection of up to four static eliminators to one power supply.

The N167 and N267 have the added benefit of being FM approved for use in Class I, Division 1 and 2, Group D hazardous areas for electrostatic finishing applications involving spray painting, dipping, coating, and liquid printing.

#### Specifications



Input Requirements	N167 – 120V, 60 Hz N267 – 230V, 60Hz
Output Voltage	7 kV, 3mA max
Number of outputs for static eliminators	4
Max Length of static bars which can be attached	300 inches
Does the unit accept shielded cable	Yes



### F167 and F267

The F167 (120V) and F267 (230V) are among Simco's most popular power supplies. They can power a variety of shockless static eliminators, HS Nozzles, and shockless static bars. The units' compact size and budget friendly price make them customer favorites.

#### Specifications



Input Requirements	F167 – 120V, 50/60 Hz F267 – 230V, 50/60 Hz
Output Voltage	7 kV, 3mA max
Number of outputs for static eliminators	2
Max Length of static bars which can be attached	200 inches
Does the unit accept shielded cable	No

## Hazard Location Power Supplies



XP167/XP267

XPM167/XPM267








### XP167/XP267 & XPM

The XP167 (120V) and XP267 (230V) are UL and CUL listed for Class I, Division 1 and 2, Group D hazardous locations when used with the XP-20F blowers.

The XPM167 (120V) and XPM267 (230V) are UL and CUL listed and can be used to power the XP-20F blowers. The XPM power supplies must be located outside of the hazardous locations.

The power supplies are equipped with an arc detection cut-off circuit with alarm capability. In the unlikely event that the static eliminator or cable should arc to ground, the arc detection circuit senses the short and shuts down the power supply within 40 milliseconds. The units include relay contacts that can be used to activate a remote visual or audio alarm and to trigger a PLC, for instance, to shut down the line.

The high voltage cable connecting XP and XPM power supplies to the static eliminator must be run in rigid or flexible metal conduit. All conduit runs are then sealed at the power supply enclosure.

**Specifications**   (XP models only)    (XPM models only)

<b>Input Requirements</b>	XP167 – 120V, 60 Hz XP267 – 230V, 60 Hz XPM267 – 230V, 60Hz
<b>Output Voltage</b>	7 kV, 3mA max
<b>Number of outputs for static eliminators</b>	4
<b>Max Length of static bars which can be attached</b>	300"



HLC



HL

### PerforMAX IQ HL & HLC Power Supply

There are two power supply choices for the Performax IQ HL system. Both Power Supplies are the heart of the Performax IQ HL system because it not only provides the high voltage output power producing ionization, but they also process all of the system intelligence to maintain and communicate complete static control. Patent Pending features include auto-calibration and dual-axis feedback control. Indicators on the HL power supply display system status, power, service status, and fault conditions for mounting outside the hazardous area. While the HLC power supply is approved for mounting inside classified hazardous locations. Through the use of the required remote display monitor you can calibrate with the touch of a button and also view all critical indicators such as service status and fault conditions.

#### HLC Specifications

<b>Input Power</b>	24VDC, 1.5A from AC adapter
<b>Output Voltage</b>	+/-7kV "Speed Bar" +/-8kV "Hybrid Bar"
<b>Dimensions</b>	388mmL x 235mmW x 159mmH [15.25" L x 9.25" W x 6.25" H]
<b>Weight</b>	14.5 kg [32 lb]
<b>Max Operating Temp</b>	43°C [110°F]
<b>Housing</b>	Cast aluminum

#### HL Specifications

<b>Input Power</b>	24VDC, 1.5A from AC adapter
<b>Output Voltage</b>	+/-7kV "Speed Bar" +/-8kV "Hybrid Bar"
<b>Dimensions</b>	202mm (L) x 123mm (W) x 106mm (H); [7.95" (L)x 4.84" (W) x 4.17" (H)]
<b>Weight</b>	1.94 kg [4.28 lbs.]
<b>Max Operating Temp</b>	43°C [110°F]
<b>High Voltage Connectors</b>	2 proprietary PerforMAX IQ static bar outlets

## Why Should I use Electrostatic Charging?

Static is an excellent means of temporarily bonding materials. SIMCO systems can apply charges up to 60,000 volts using various applicators designed to meet the requirements of your specific application.

## SIMCO Offers State-of-the-Art Equipment

SIMCO Chargemaster power supplies utilize high frequency switching technology. This technology offers three major advantages. First, it ensures that the voltage output from the power supply is equal to the voltage requested via the controls. Second, fluctuations on the AC input line will not affect the voltage output. Finally, variances in load, up to the recommended maximum, do not affect the voltage output.

Additional circuitry controls the duty cycle of an arcing condition, ensuring that little energy is created during arcing to prevent personnel injury and equipment damage.

## Features

- High-frequency switching technology compensates for changing input/output conditions
- Regulated voltage, line and load eliminates "load down" effect which reduces performance
- Multiple applicator operation ports
- Current limited for operator safety
- Remote operation capability permits simple, hassle-free systems integration
- High-quality engineering

## Charging Applicators

Each Chargemaster system consists of a CM Series, BP Series, or VCM series DC power supply and one or more of the following SIMCO charging applicators:

**Pinner® Arc Resistant Bars** — Pins are resistor limited and removable, allowing safer operation and longer bar life.

**Pinner Superbar** — Resistor limited with removable pins, the Superbar is for the most difficult charging applications.

**Charging Applicators** — SIMCO offers a wide range of spot charging applicators including high temperature, resistor and non-resistor coupled versions.

## Arc Resistant Technology

Resistance within a charging applicator enables the use of high voltage for temporary bonding while limiting the current to safe levels. It is an important feature because it ensures equipment and personnel safety.

During an arcing condition, the flow of voltage is disrupted, so there is no ionization and therefore no pinning action. If arcing is prevalent or unavoidable in an application, select a resistor-limited applicator, which will prevent arcing and supply a continuous, though lower, ionization level. When the ground reference comes too close to the ionizing point, more current is drawn from the power supply. By limiting the current in the applicator, a demand for increased current from the power supply is minimized. The resistor lowers the output pin current to prevent arcing. Voltage, however, is still flowing, and pinning action is still possible. A Pinner Arc-Resistant Bar has four points per each resistor. If one part of the bar is stressed, only one resistor (4 points) is in current limit. All other pins are still ionizing at peak efficiency.



## Chargemaster CM20

The Chargemaster CM20 is a switch-mode, power supply. The unit's output current is electronically restricted and protected against arcing. The output voltage can be set between 0 and the unit's maximum voltage (20 kV). The power supply incorporates functions for remote on/off and remote voltage adjustment. relay.

## Specifications



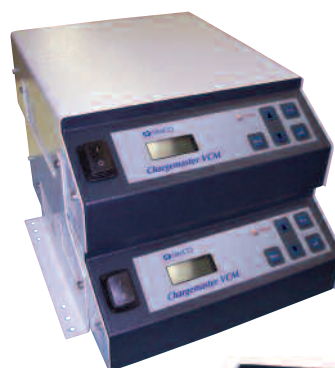
Output Voltage, NEG	0-20 kV
Output Current, Max.	0-0.7 mA
Output Power Max.	14 W
Output Ports	4
Voltage Control	Front Panel Digital
Weight	7.5 lbs
Dimensions (WxHxD)	6" x 4.25" x 11.25"

# Chargemaster DC Power Supplies

## Chargemaster VCM



**Dual-Mount**



**Wallmount**



### Description

The Chargemaster VCM is programmable for either voltage or current control mode to supply the high voltage for charging bars and various charging applicators used to electrostatically bond materials. The Chargemaster VCM provides a simple and economical solution for a wide range of production processes maximizing the efficiency of the application.

The Chargemaster VCM is a switch-mode, power factor corrected, power supply. The unit's output current is electronically restricted and protected against arcing. The output voltage can be set between 0 and the unit's maximum voltage (30kV or 60kV) in voltage mode, or will automatically adjust to maintain a desired current level when operating in current mode. All of this is accomplished using the unique scroll-through menu programming capability of the Chargemaster VCM.

The VCM is available in 3 versions:

- with negative output voltage
- with positive output voltage
- with outputs of both positive and negative polarities (dual-mount)

### Features

- Capable of voltage or current control mode operation
- Unique scroll-through menu programming control
- Two front panel display options for flat surface or wall mounting
- Large LCD for mode and output display
- "Clean Bar" display to alert maintenance requirements
- 4 ports per polarity
- Universal input voltage
- Mounting brackets for bottom or top mounting
- Short circuit protected output
- Stable, electronically controlled output voltage
- Remote control options
- Analog standards for remote output adjustments
- Run option for easy manual test

### Specifications



Input Voltage	85-260 VAC @ 47-63Hz
Output Voltage	0-30 kV @ 5mA & 0-60 kV @ 2.5mA
Operating Mode	Constant Voltage or Constant Current
Output Stability	Better than 0.2%
Voltage Rise Time	Under 70 msec
Output Ports	4
Remote Output Adjust	Analog Signals, 0-20/4-20 mADC or 0-5/0-10 VDC
Remote On/Off	DB-25 connector, and programmable menu
Output Voltage Setting Lock-out	Front Panel Membrane Switch Lock-out Function
Enclosure	Steel
Dimensions	30 kV – 10.5" W x 4.25" H x 13.5" D 60 kV – 10.5" W x 4.25" H x 15" D
Weight	16.5 lbs
Ambient Operating Temperature	32° F to 131° F (0° C to 55° C)



**See Product Applications  
on Page 31**



## FlexTac



Closeup of Blade

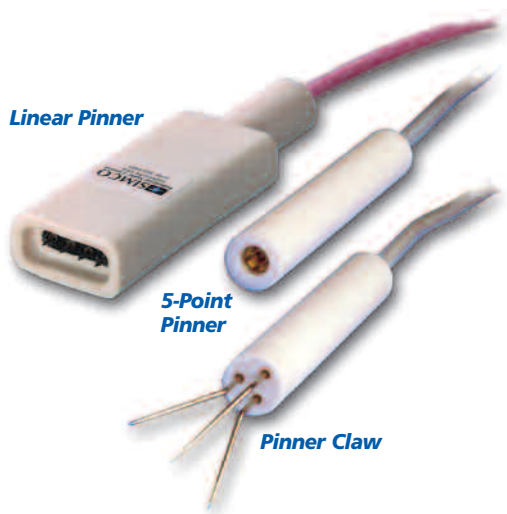
### Description

The FlexTac Static Charging Applicator, when used with a SIMCO Chargemaster 30 kV power supply, delivers an static charge to temporarily pin or bond lap cards or other materials, into place. Lap card insertion rate will increase improving productivity, minimizing wasted cards and increasing profits. The FlexTac provides maximum voltage and current output for superior pinning action. It is a non-current limited, "hot" applicator for use in areas where contact with personnel is unlikely. The FlexTac gooseneck and magnetic base are also available without the "hot" applicator, and will accept all styles of Pinner Arc-Resistant applicators.

### Specifications

Effective Applicator	Length: 3" (76mm)
Overall Applicator Size	1" diameter x 5.12" L (25mm x 130mm)
Flexible Gooseneck Arm	1.5" diameter x 13" L (38mm x 330mm)
Gooseneck Bend Radius	1" (25mm) minimum
Materials	Applicator blade: Stainless steel Body: PVC, plastic Arm: EPDM rubber
Magnetic Base	2.5" L x 3.25" W x 2" H (64mm x 83mm x 51mm)
Weight	3lbs (1.4kg)
Standard Cable Length	10' (3m)
Cable Insulation	Flame retardant
Operating Voltage	30kVDC maximum
Operating Distance	1.5" nominal (38mm)
Operating Temperature	140°F (60°C) Maximum

## Pinner



### Specifications

Profile	
Linear Pinner	4.75" x 0.75" dia (120 mm x 19 mm)
5-point Pinner	7" x 0.75" dia (178 mm x 19 mm)
Pinner Claw	8.5" x 0.75" dia (216 mm x 19 mm)
Points	
Linear Pinner	4 removable
5-point Pinner	5 fixed
Pinner Claw	3 removable
Temperature Rating	500° F/260° C
Power Supply	30 kV/50 kV

## Chargemaster Applicators

### Pinner and Pinner NR Arc Resistant Bar



#### Description

The Pinner Bar and Pinner Bar NR (Non-Replaceable Pins) are current limited and arc resistant, and featuring rated high-voltage cable with silicone sleeving to ensure operator and equipment safety. The Pinner Bar NR has non-replaceable pins. The Pinner Bar features removable ionizing pins, which significantly extends the life of the bar. The bars are available with an optional high-voltage cable connector so bars can be easily removed without unthreading the cables. Pinner Static Charging Bars are rated for use in temperatures up to 200 degrees F and with high voltage to  $\pm 30$  kV and to  $\pm 60$  kV with special provisions.

#### Typical Use

Designed and intended for use in all applications.

#### Specifications

Effective Length	5" to 147" in 3" increments
Bar Dimensions	3.25" H x .75" W
Weight	2 lb. 2 oz per foot
High Voltage Cable	10' standard length, silicone with flame retardant protective sleeve. Straight or right angle cable to bar connection. 1/2" minimum bend radius
High Voltage Connector	Standard 50 kV spring-loaded connector with optional 30 kV supplied
Operating Voltage	Rated at +/- 30 kV; can be used to +/- 60 kV with special provisions
Mounting	Fully adjustable bolt head channel
Emitter Points	Pinner - removable and replaceable Pinner NR - not removable or replaceable

### Pinner Superbar



#### Description

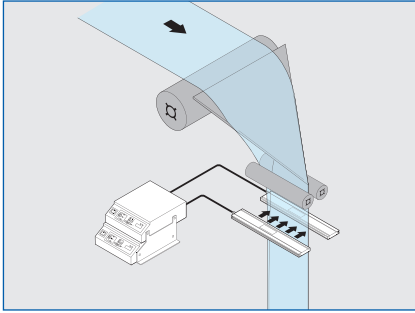
The Pinner Superbar delivers more voltage and current than any high voltage applicator available. The Pinner Superbar is built for serious pinning tasks. For instance, when used for catalog stacking, the Superbar fits between the belts, offers easy height adjustment, and outperforms other product available.

#### Typical Use

Designed and intended for use in catalog stacking.

#### Specifications

Type	Resistor-coupled, arc resistant
Points	316 stainless steel, removable, replaceable
Profile	1.25" x 6.5", PVC
Inner Bar	RTV silicone compound
Length	10.5", 14.25" (overall)
Voltage Rating	30 kV, recommended for CM-30 & BP-30
Weight	5 lb 8 oz
Cable	Removable, straight exit, 50 kV rated, 221° F (105° C), 10' length. Also available in 20' and 30' lengths.
Mounting	Key slots (x4) 5/16-18 stainless steel nut and bolt kit
Temperature Rating:	110° F (43° C)

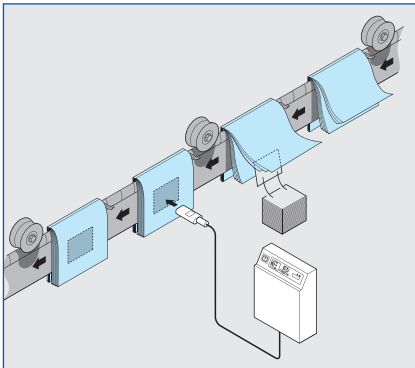
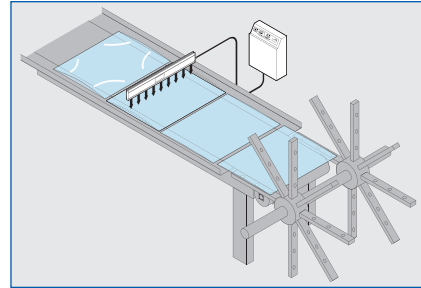


### Ribbon Tacking

A charging system used for ribbon tacking bonds the ribbons together so that they move easily, preventing creases and 'dog ears' in the finished product.

### Plastic Bagmaking

When manufacturing bags, use an electrostatic charging system to prevent the bags from lifting and to help the bags continue along the conveyor line.

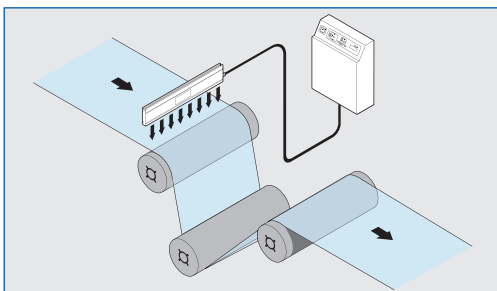
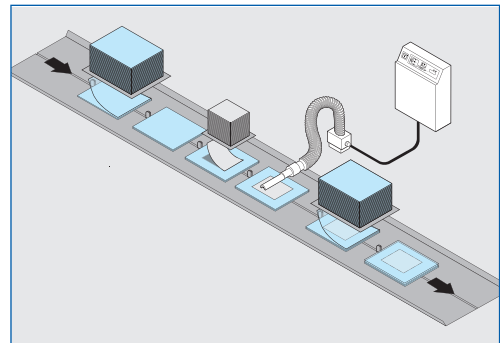


### Card Inserts- Saddle Stitch

On a saddle stitcher, place a charging applicator over the signature just as the catalogs close to trap the card in place and prevent fall outs.

### Card Insertion on Perfect Bound Line

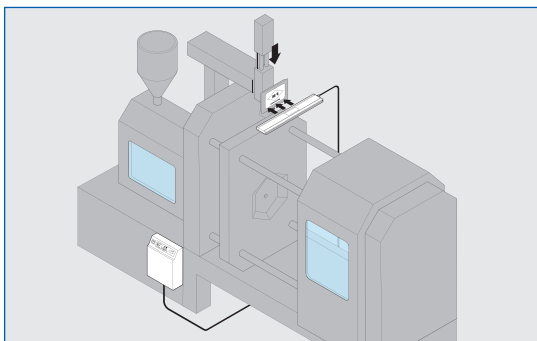
On perfect bound lines, card inserts often overshoot the target area due to the speed of the line. Applying a static charge effectively holds the card in place, reducing sliding and accidental gluing.



### Chill Tack Systems

In heatset offset printing, an electrostatic charging system pins the web to the chill roll to prevent slipping and eliminate streaking.

## Chargemaster Applications

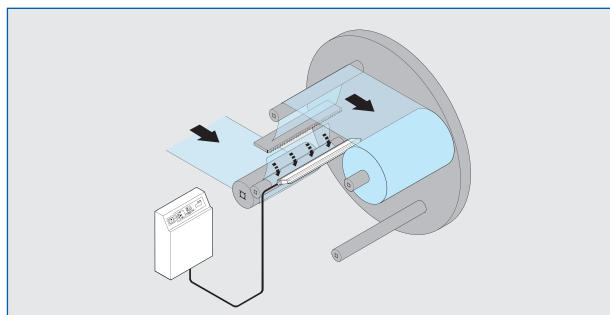
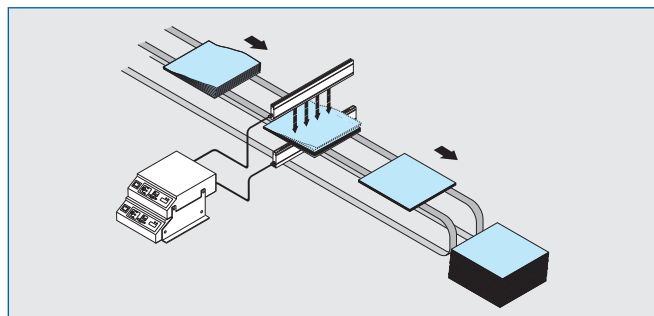


### In Mold Labeling

An electrostatic charging system is used to hold a label flush against the inside of the mold during injection molding to improve finished product quality.

### Catalogue Stacking

Using a static charging system to charge catalogs before stacking adheres the catalogs together while reducing edge damage, improving transportation and increasing production.



### Roll to Roll Transfer

Applying a temporary charge to a roll with a charging system adheres the leading edge to the core without tape or adhesives while eliminating creases.

## Methods of fighting static & contaminants on your web.

### THE PROBLEM

Slitting, sheeting, bag making, and other production processes of paper, film, and foil materials create particles that contaminate the web. Transporting the web through the production process causes a boundary layer of air that essentially traps the smaller particles. Contact and separation of the web material with the machine rollers generates static electricity that results in an electrostatic adhesion bonding contaminants to the surface of the web and the faster you try to operate the more complicated these problems described above become.

Contaminated surfaces cause defects in printing, coating uniformity, laminating, etc. resulting in quality problems, costly rejects, and ultimately dissatisfied customers.

### THE SOLUTION

SIMCO offers a wide variety of web cleaners. The one that is right for you depends on how clean you need your web surface. Most systems are configured with static bars that neutralize static charges and prevent reattraction of contaminants to the web surface.



Cleaning Sheets on a United Die Cutter

On a corrugator dry end, slit web cleaning before upper sheeting knife



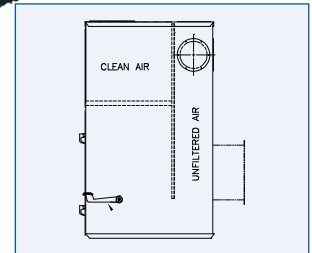
# Neutro-Vac® Vacuum Web and Sheet Cleaning Systems



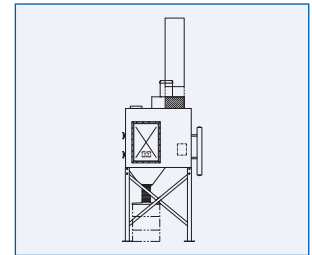
Neutro-Vac NWS



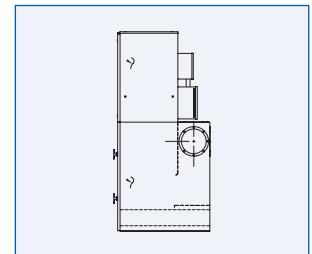
## Dust Collector Styles



DC84



2PJ4XP



DC1200

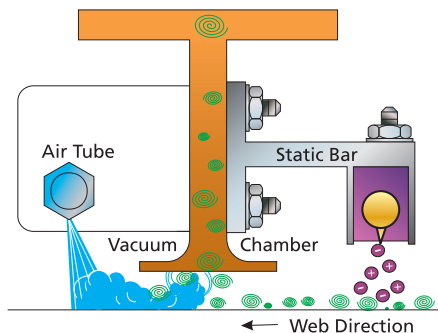
## Description

The Neutro-Vac cleaner uses vacuum suction to remove particulate down to 20 microns in size from webs and sheets. Neutro-Vac heads combine the power of a compressed air blast, static elimination, brushes and low pressure, high volume vacuum. Tapered head design provides aerodynamic suction, allowing the Neutro-Vac head to vacuum the air up to three inches before and after the head intake.

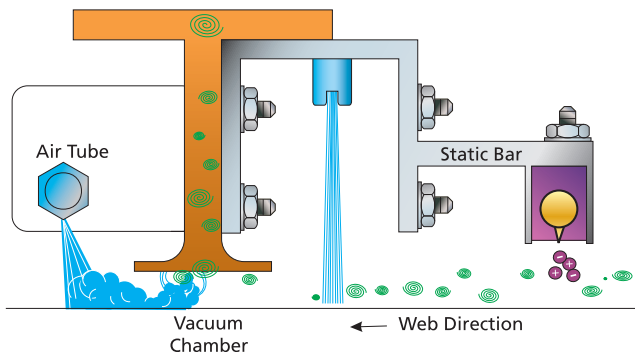
## Features

- One sided or top and bottom web cleaning
- Contact, non-contact and hazardous location configurations
- HEPA after-filter available

### Neutro-Vac Non-Contact Head, with Static Bars and Air Tube

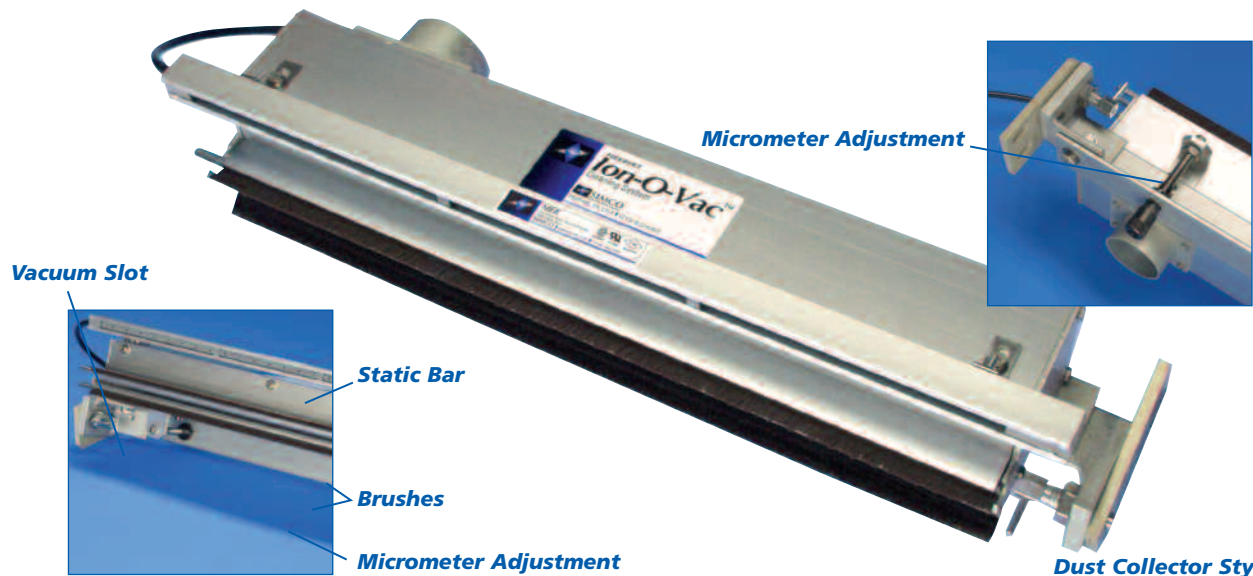


### Neutro-Vac Brush Contact Head, with Static Bars and Air Tube





## Ion-O-Vac® Mark I Vacuum Web Cleaner



- **Good for picking up smaller particles**
- **No need for compressed air**
- **Requires precise position and controlled web**

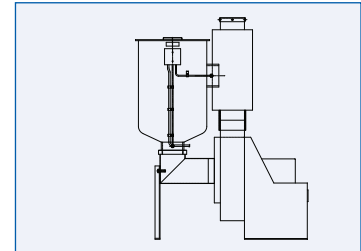
### Description

The Mark I uses a high pressure low volume vacuum collector to remove particulate down to 20 microns in size from webs and sheets. Typical models include brushes and static bars before and after the vacuum slot. An Ion-O-Vac is normally mounted where material has more than 30 degrees of surface contact with a roller or cylinder. This maximizes the cleaning effect of the high pressure vacuum.

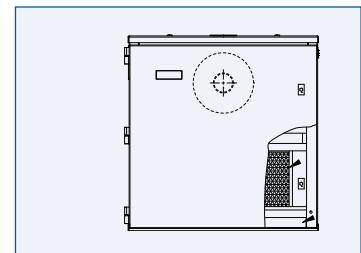
### Features

- One sided or top and bottom web cleaning
- Contact and non-contact configurations
- Brackets and ducting included
- Manual or optional pneumatic retraction systems to raise and lower the heads

### Dust Collector Styles

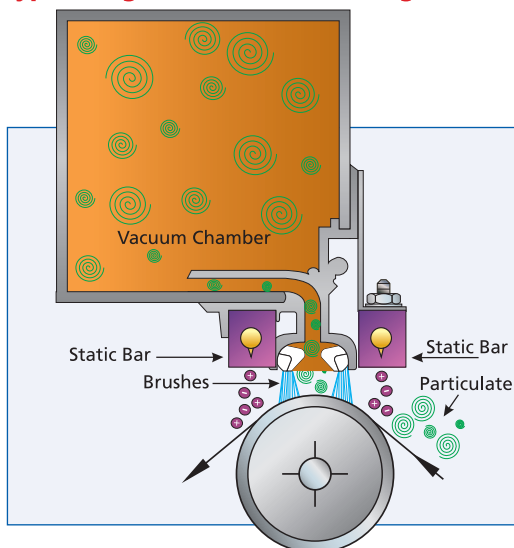


800 CFM



DCX500

## Typical High Pressure Hood Design



### Benefits of static elimination

Static electricity causes dust and dirt to adhere to the material being cleaned. SIMCO cleaners typically include static eliminators to break the static bond between the substrate and the dust on the surface. The particulate can then be easily removed from the substrate.

### What's a micron?

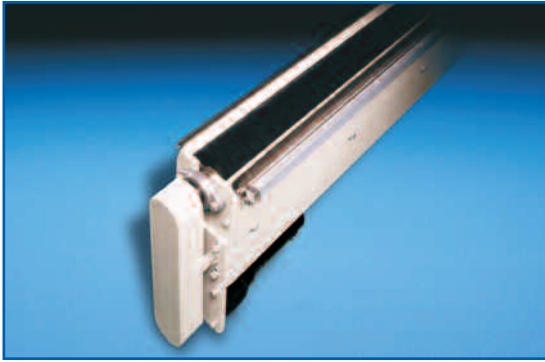
One-thousandth of a millimeter!  
Here are some familiar items and their average size in microns:

<b>Bacteria</b>	2 microns
<b>Dental Powder</b>	10 microns
<b>Scouring Powder*</b>	25 microns
<b>Human Hair</b>	70 microns
<b>Grain of Salt</b>	100 microns

\* Smallest seen by the naked eye

# Rotary Brush Vacuum Web Cleaners and Sheet Cleaners

## Rotary Brush Cleaners - Mark IV



### Description

Mark IV systems utilize the power of rotary brush action to "scrub" the material surface, removing particles as small as 5 microns in size. The brushing action of the Mark IV rotary brush system is designed for the most difficult to clean materials that demand the cleanest surfaces.

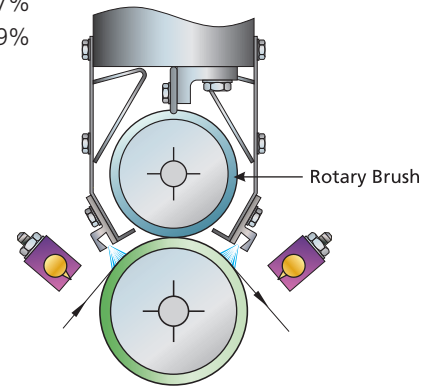
Standard features include a canister collector with cartridge filter, pre-filter and motor starter, Ion-O-Vac® head with rotary brush, drive motors and controls, static eliminator(s) and brackets.

### Options

- One-sided or top and bottom substrate cleaning
- Micrometer adjustment mechanisms to adjust the position of the head in relation to the backing roller
- Pneumatic lifts to move head during web threading and maintenance

### Mark IV performance on a PVC web, 3 mil thick at 150 ft/min.

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



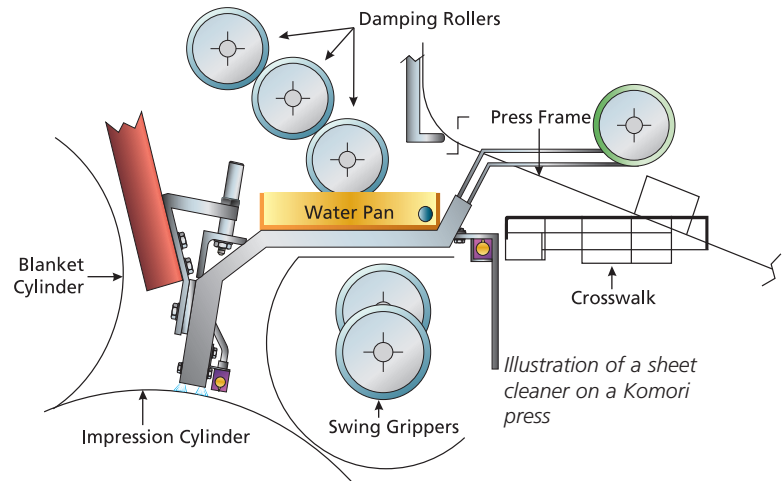
## Cleaners for Sheet-fed Presses - Mark I



### Description

Systems include a high velocity dust collector and custom designed vacuum head with cleaning brushes and static bar (not included on selected models). Most heads include quick release brackets to allow easy and quick access to the cleaner head and the press. Brushes easily slide in and out of the head and are economical to replace.

Cleaners are available for a variety of press models from Heidelberg, Komori, Mitsubishi, MAN Roland, KBA & Adast.



Blanket cylinder after 500 sheets with cleaner OFF

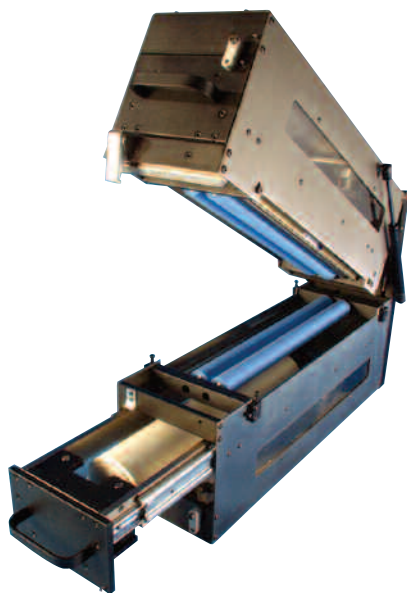


Blanket cylinder after 500 sheets with cleaner ON

## Contact Cleaners

SIMCO's Contact Cleaning Systems can remove particulate down to 1 micron in size from a moving web. Using Contact Cleaner Rolls (CCRs) in a nip configuration, 0.5 to 2.0 psi pressure is applied to the web, squeezing out the boundary layer of air. Performance evaluations reveal a cleaning efficiency of 97% of particulate down to 10 microns in size and removal of most particles to 1 micron in size.

### HexClam and QuadClam



#### Features

- Quick release gudgeons for easy tape removal
- Air cylinders engage and separate rolls, prolonging CCR and tape life
- Static bar and power supply remove static charges and optimize web cleaning
- Operator panel remotely mounted for convenient operation

#### Description

HexClam and QuadClam are named for their clamshell design. These advanced 4 and 6-roll assemblies allow the top-half of the cleaner to open and the tape-rolls to slide out on drawers. This greatly facilitates tape maintenance and web threading. The HexClam (4 CCRs and 2 tape rolls) is available to 24" and the QuadClam (2 CCRs and 2 tape rolls) is available for 30" to 60" web widths. Both are constructed of stainless steel and aluminum for strength and are equipped with a static neutralizing bar and pneumatic cylinder to separate tape rolls from CCRs.

#### HexClam Specifications

No. of CCRs	4 rolls
CCR Diameter	1.25" diameter
No. of Tape Rolls	2 rolls, 80' each
Max. % Clean	99%
Web Speed	500 FPM
Electrical	120 VAC, 2 AMP
Pneumatic	60 PSIG to 90 PSIG (depending on width)
SM Static Bar	Shockless, with metal shielded cable to reduce EMI/RFI emissions
S165 Power Supply	120V, 50/60 Hz

### HexClean and QuadClean



#### Description

HexClean and QuadClean are basic 4-roll and 6-roll assemblies for both top and bottom web-surface cleaning. The HexClean (4 CCRs and 2 tape rolls) is available to 24" wide and the QuadClean (2 CCRs and 2 tape rolls) is available for 30" to 60" web widths. Both feature a static neutralizing bar, pneumatic cylinder to lift tape rolls and CCRs, and easy to maintain stainless steel and aluminum construction.

#### HexClean Specifications

No. of CCRs	4 rolls
CCR Diameter	1.25" diameter
No. of Tape Rolls	2 rolls, 80' each
Applications	Converting & Printing
Max. % Clean	99%
Web Speed	500 FPM
Electrical	120 VAC, 2 AMP or 230 VAC,
Pneumatic	60 PSIG to 90 PSIG (depending on width)
SM Static Bar	Shockless, with metal shielded cable to reduce EMI/RFI emissions
S165 Power Supply	120V, 50/60 Hz

## Conveyostat® In-Line Ionizer



*Indoor unit with mounting flanges*



*Indoor unit for small diameters*



*Indoor unit with rolled edge*

### Description

Conveyostat Systems are designed to provide in-line ionization for neutralizing static charges on materials in pneumatic conveying systems.

The Conveyostat unit is typically mounted at the input to the cyclone or collection vessel so that trim materials are neutralized as they pass through the unit.

### Features

- Ionization prevents large pneumatic conveying systems from becoming jammed
- Dual-phase ion generation ensures high neutralization rates
- Units available for indoor and outdoor installations



*Dual Phase power supply produces high voltage for high speeds.*

### Specifications

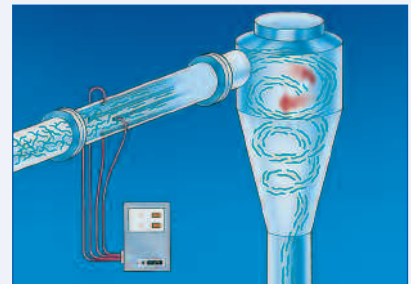
System Components	One ionizer housing (tube) and dual-phase AC power supply
Housing	Stainless steel tube standard
Standard Length	24"
Diameter	2" — 12", call for larger sizes
Standard Cable	10' (from ionizer to power supply)
Power Supply	SIMCO's Dual Phase Power Supply
Input Voltage	120 VAC, 60 Hz, 0.5 Amps
Weight	22 lbs power supply
Options	Flanges (compression coupling is standard) and outdoor weatherproof models available



**Solution:** The Conveyostat system neutralizes trim materials prior to entering the cyclone. Once neutralized, the materials flow smoothly throughout the system, eliminating system shutdown.

### Slitter Trim Collection in Converting

**Problem:** Highly charged slitter trim materials cling to the sides of the cyclone of the trim collection system, forming a clog across the exit duct. The trim collection system must be shut down — affecting all operations producing slitter trim.






## Warranty

SIMCO equipment has been carefully tested and inspected at the factory and is warranted to be free from any defects in material or workmanship. SIMCO will, under this warranty, repair or replace any equipment which proves, upon our examination, to have become defective within the Warranty period from the date of purchase. A one-year Warranty applies to all SIMCO equipment. A six-month warranty applies to Eltex equipment. Equipment is to be returned by the purchaser to SIMCO, 2257 North Penn Road, Hatfield, Pennsylvania, 19440, transportation pre-paid and insured for its full purchase price. Prior to returning goods for any reason, contact SIMCO for an Authorized Return Number. This number must accompany all returns. The Warranty does not apply when the equipment has been tampered with, misused, improperly installed, altered, been damaged through abuse, carelessness, accident, connected to improper line voltage, or has been serviced by anyone other than an authorized factory representative.

The Warranty does not apply when SIMCO parts and equipment have been energized by other than the appropriate SIMCO power supply or generator, or when SIMCO power supplies or generators have been used to energize other than SIMCO parts and equipment.

SIMCO makes no warranty, expressed or implied, nor accepts any obligation, liabilities or responsibility in connection with the use of these products other than the repair or replacement of parts as stated herein.


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 Products are determined compliant with applicable directives for Europe, through self declaration or third party examination.



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