



An ITW Company

# **Curtain Transvector With MEB Static Bar**

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## **INSTALLATION AND OPERATING INSTRUCTIONS**

## TABLE OF CONTENTS

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1. INTRODUCTION .....	3
2. SAFETY AND NOTES .....	4
3. SPECIFICATIONS .....	5
4. INSTALLATION .....	6
5. OPERATION .....	9
6. TROUBLESHOOTING .....	9
7. MAINTENANCE .....	10
8. REPLACEMENT PARTS .....	11
9. WARRANTY .....	11

## **1. INTRODUCTION**

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Simco-Ion's Static Neutralizing Curtain Transvectors combine the proven static neutralizing abilities of static bars with the unrivaled air handling predomance of air knife technology to deliver high efficiency cleaning and static neutralizing unachievable by ordinary compressed air devices.

Simco-Ion's D167RY, D167Q, F167, F267, N167 and N267 power supplies are designed as a power source for the Static Neutralizing Curtain Transvectors. This equipment is used to eliminate or significantly reduce static charges that disrupt manufacturing processes. The high voltage from the power supply causes the ionizing pins of the static neutralizing bar to generate both positive and negative ions from surrounding air molecules. Utilizing the highly concentrated airstream of a curtain transvector aids in delivering the air ions into the work area more efficiently than non-assisted static bars or bars with conventional air tubes. Additionally, the curtain transvector provides the benefit of greatly improved cleaning abilities with substantially reduced air consumption.

Using a Static Neutralizing Curtain Transvector with the MEB Static Bar increases productivity and yield in many industrial processes by eliminating the static charges that cause machine jams, material defects and attract dust and dirt.

### **Features and Benefits**

- Cleans while neutralizing static charges
- Reduces machinery jams
- Prevents attraction of dirt and contamination
- Low air requirements

### **Receipt of Equipment**

1. Carefully remove the equipment from the carton.
2. Inspect contents for damage that may have occurred during shipment. If any damage has occurred during shipment, the local carrier should be notified at once. A report should be forwarded to Simco-Ion, 2257 North Penn Road, Hatfield PA 19440, and (215) 822-6401.
3. Empty the carton to insure that small parts are not discarded.

### **Return Shipments**

Prior to returning goods, contact a Simco-Ion Customer Service representative for a Return Authorization Number. This number should be included on the packing list. All correspondence should also reference the Return Authorization Number. Any item being returned should be shipped prepaid and packed to provide adequate protection.

## 2. SAFETY AND NOTES

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**NOTE** – Statements Identified with a NOTE indicate precautions necessary to avoid potential equipment failure.



**CAUTION** – Statements identified with a CAUTION indicate potential safety hazards.

This equipment must be correctly installed and properly maintained. Adhere to the following cautions for safe installation and operation.

1. Read instruction manual before operating or installing device.
2. Qualified service personnel must do installation and repairs.
3. All equipment must be properly grounded, including the machine frame to which the equipment is mounted.



**CAUTION** – Electrical Shock Hazard – always disconnect power supply before connecting or disconnecting static neutralizing equipment. Avoid touching the static neutralizing bar when power supply is energized.



**CAUTION** – Fire Hazard – Do not install or operate equipment in close proximity to any flammable solvents.

### 3. SPECIFICATIONS

<b>Static Neutralizing Curtain Transvector w/ MEB Bar</b>	
Operating Voltage	7 kV
Operating Temperature	110° F (43° C) Maximum
Operating Humidity	70% RH maximum, no dewing permissible
Effective Lengths	6" to 72" (in 6" increments)
Dimensions	(EL +1") L x 1.8" H x 2.1" W
Air Connection	¼" NPT
Compressed Air Supply	10-100 PSIG
Air Consumption	4.3 SCFM per inch (@80 PSIG)
Air Amplification Ratio	25:1

	<b>F167</b>	<b>D167Q</b>	<b>D167RY</b>	<b>N167</b>	<b>F267</b>	<b>N267</b>
Input Voltage	120 V	120 V	120 V	120 V	230 V	230 V
Frequency	50/60	60 Hz	50/60	60 Hz	50/60	60 Hz
Qty of Output Ports	2	2	4	4	2	4
Capacity	200" EL	Shielded Cable	200" EL	300" EL	200" EL	300" EL

## 4. INSTALLATION

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**NOTE:** Only qualified service personnel are to perform installation.



**CAUTION:** Electrical Shock Hazard – de-energize all power supplies before performing any installation tasks.

### Air Supply Installation

1. Estimate the total length of pipe required from the compressed air source to the Curtain Transvector
2. Estimate compressed air consumption 4.3 SCFM per inch of Curtain Transvector
3. Use the following chart to determine recommended pipe diameter
4. It is essential that the compressed air line contains a filter/separator (5 micron filter recommended) and a pressure regulator is also recommended. Each component must be sized large enough to assure no restriction to the airflow calculated above.
5. Oil in the airline, from the air compressor or lubrication system, is usually not a problem. Occasionally however, older compressors produce extremely oily air. In such cases, use an oil removal filter downstream of the filter/separator/regulator.



**NOTE:** Failure to adequately filter the compressed air will likely result in clogging the very fine slot of the ionizing transvector (sometimes within minutes of operation).

Identify the pipe length required in the far-left column. Follow that row across to the right until you find the first number that exceeds your calculated consumption. Follow that column up to specify the recommended pipe diameter.

Pipe Diameter – Schedule 40 - Nominal									
Pipe Length		1/4"*	3/8"*	1/2"*	3/4"*	1"*	1-1/4"*	1-1/2"*	2"*
	10 ft	12	26	46	93	169	336	494	922
	25 ft	8	16	29	59	107	212	312	583
	50 ft	5	12	21	41	76	150	221	412
	75 ft	4	9	17	35	62	123	180	337
	100 ft	4	7	15	29	54	106	156	292

\*Compressed Air consumption (SCFM)  
(Based on 5 psi pressure drop across pipe length)

### Static Neutralizing Curtain Transvector Mounting.

1. Mount the Curtain Transvector just ahead of static buildup, close enough to the target material so that charged dust and particles can be easily neutralized and blown free (typically 6" to 18" from the target material).
2. Securely mount the unit by the rigid compressed airline installed to supply the unit. Alternatively, a mounting bracket can be fabricated by the installer and mounted to the studs attaching the static bar to the Curtain Transvector.

### Grounding

1. It is essential that the Curtain Transvector be grounded either through well-grounded electrical conduit or by heavy copper wire connecting it to a water pipe.
2. The static neutralizing bar's metal casing must also be grounded to avoid operator shock and to ensure proper operation. Grounding is inherent when the metal casing intimately contacts the machine frame. If the static bar must be mounted from wooden or other non-conductive materials, install a wire to connect the mounting bracket of a static bar to a metal part of the grounded machine frame or a well-grounded electrical conduit or water pipe.

3. The power supply is grounded when plugged into a 3-prong electrical outlet. If a grounded outlet is not available, either bolt the power supply to a well-grounded metal machine frame or connect a heavy copper wire from the ground terminal of the power supply to a well-grounded electrical conduit or water pipe.

Adjust the flexible arm of the mounting stand to direct the pinner applicator towards the targeted object.

### **Mounting the Power Supply and Installing High Voltage Cables**

1. Mount power supplies to the machine frame (preferably away from operator contact) or to a nearby wall or post.
2. Route the high voltage cables attached to each static bar along the machine frame or wall to the power supply.



**NOTE:** Do not route cables inside metallic conduit.

3. Cable supports are used to guide the cables back to the power supply. All cables must be kept a minimum of ¼” away from machine frame and parts, walls and ceilings. If this is not possible, encase cables in plastic insulating tubing (available from Simco-Ion).
4. Separate ground wires from high voltage cables, leaving at least ¼” between them.
5. Install spring loaded cable connectors on the free end of each cable, as described on the enclosed instruction sheet.
6. Ensure that the power supply is de-energized, and then remove the protective plastic plug from the power supply high voltage connection by gently prying with an insulated screwdriver.
7. Insert the cable (with spring loaded connector attached) into the power supply high voltage connection. Screw in the knurled plug to secure the cable. Finger tighten only.

## 5. OPERATION

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Before energizing Power Supply;

1. Ensure that all power supplies are properly grounded
2. Ensure that all static bars are properly grounded
3. Ensure that all static bars have been properly located, positioned and installed

After the above checks have been performed, simply energize the power supply and open the supply of compressed air to operate the Static Neutralizing Curtain Transvector.

## 6. TROUBLESHOOTING

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**NOTE:** Only qualified service personnel are to perform troubleshooting tasks.

**If equipment fails to function properly;**

1. De-energize the power supply
2. Ensure all ground connections are intact
3. Check that all cable connections are tight. Finger tighten only.
4. Energize the power supply (if equipped with an on/off switch, ensure that it is in the on position).
5. Use a Simco-Ion TensION to verify the presence of high voltage at each ionization point. If any points are not working, check the area for metallic fragments or other contamination.
6. If none of the points are working, either the bar or the power supply is defective. To identify which is not working;
  - De-energize power supply
  - Disconnect all static bars from the power supply by unscrewing the knurled plugs and gently pulling out each high voltage cable.
  - Connect an insulated test wire to the power supply's ground stud
  - Energize the power supply
  - Slowly insert the free end of the test wire into one of the high voltage receptacles. As the insulated wire approaches the contact within the terminal, a spark should occur and arcing should be heard. If a spark occurs and arcing is heard, then the static bar is faulty. Otherwise, the power supply is faulty. If either is faulty, Contact Simco-Ion customer service or your local Simco-Ion representative.

## 7. MAINTENANCE

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**NOTE:** Only qualified service personnel are to perform maintenance tasks.



**NOTE:** Never use hard or sharp objects to scrape ionization points.



**CAUTION:** Electrical Shock Hazard – always disconnect power supply before connecting or disconnecting static neutralizing equipment. Avoid touching the static neutralizing bar when power supply is energized.



**CAUTION:** Fire Hazard – Do not install or operate equipment in close proximity to any flammable solvents.

Dust or dirt around the ionization points will reduce the effectiveness of the static bar. The ionization points must be cleaned periodically to prevent deposits from accumulating:

1. De-energize all power supplies before performing any maintenance tasks.
2. Use dry compressed air to remove loose particulate from the static bar. If the bar is very dirty, it may be necessary to remove the static bar from its mounting and turn it upside-down while using compressed air to clean. A soft brush with plastic bristles may be used as well.
3. Press a soft pencil eraser onto each point and gently twist to remove any buildup from the ionization points.
4. Wipe ionization points with isopropyl alcohol applied to a clean dry cloth to remove ink or resistant coatings.



**NOTE:** The alcohol must not contain additives.



**NOTE:** Do not pour alcohol directly onto the bars, and do not soak the static bar or any of its components in alcohol.



**CAUTION:** Fire Hazard – Ensure all traces of alcohol have been removed and the static bar is completely dry before energizing the power supply.

## 8. REPLACEMENT PARTS

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Part	Part Number
SLCC HV Connector Kit.....	5050001
Plastic Insulating Tubing .....	4800061
Insulated HV Cable Supports .....	4104946
Cleaning Brush .....	4670204
TensION.....	4050556

## 9. WARRANTY

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This product has been carefully tested at the factory and is warranted to be free from any defects in materials or workmanship. Simco-Ion will, under this warranty, repair or replace any equipment that proves, upon our examination, to have become defective within one year from the date of purchase.

The equipment being returned under warranty should be shipped by the purchaser to Simco-Ion, 2257 North Penn Road, Hatfield PA 19440, transportation prepaid and insured for its replacement cost. Prior to returning any goods for any reason, contact Simco-Ion Customer Service at (215) 822-6401 for a Return Authorization Number. This number must accompany all returned items.

This warranty does not apply when the equipment has been tampered with, misused, improperly installed, altered, has received damage through abuse, carelessness, accident, connected to improper line voltage, or has been serviced anyone other than an authorized factory representative.

The warranty does not apply when Simco-Ion parts and equipment have been energized by other than the appropriate Simco-Ion power supply or generator, or when a Simco-Ion power supply or generator has been used to energize other than Simco-Ion parts and equipment. Simco-Ion makes no warranty, expressed or implied, nor accepts any obligation, liabilities, or responsibility in connection with the use of this product other than the repair or replacement of parts stated herein.

**Simco-Ion**

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