



An ITW Company

# **MEB & MEJ Static Neutralizing Bars and Power Supplies**

**(D167RY, D167Q, F167, F267, N167 and N267)**

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## **INSTALLATION AND OPERATING INSTRUCTIONS**

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## 1. SAFETY WARNINGS

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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.



**NOTE!** – This equipment must be correctly installed and maintained. Adhere to the following notes for safe installation and operation.

1. Read instruction manual before installing or operating equipment.
2. Only qualified service personnel are to perform 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 static neutralizing bar when power supply is energized.



### **CAUTION! – FIRE HAZARD**

Do not install or operate equipment in close proximity to any flammable solvents.

## **2. INTRODUCTION**

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Simco-Ion's D167RY, D167Q, F167, F267, N167 and N267 power supplies are designed as a power source for the MEB and MEJ static neutralizing bars. 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. The static charge on the material being processed will attract and combine with the oppositely charged ions, causing the material to be neutralized. The excess ions either recombine in air or dissipate to ground.

The MEB and MEJ are static neutralizing bars with capacitively coupled ionization points. The capacitively coupled design provides a safety feature that prevents hazardous electrical shocks if there is contact with the ionizing pins. This safety feature does not compromise the static bar's performance.

The D167RY, D167Q, F167, F267, N167 and N267 power supplies are rated at an output of 7,000 volts. Their current-limiting design assures a maximum short-circuit current of only 5 mA, providing an additional safety feature that further prevents hazardous electrical shocks if there is contact with the ionizing pins.

### **Receipt of Equipment**

1. Carefully remove the equipment from its carton.
2. Inspect contents for damage that may have occurred during shipment. If any damage has occurred, 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 ensure 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.

### 3. SPECIFICATIONS

	<b>MEB</b>	<b>MEJ</b>
Output Voltage	7 kV	7 kV
Temperature	110°F (43°C) max	
Humidity	70% RH max, no dewing permissible	
Dimensions	0.66"W x 0.79"H	11/16" dia
Enclosure	Anodized Aluminum	Anodized Aluminum
Inner Bar Material	Rigid Polyvinyl Chloride (PVC)	
Emitter Point	Stainless Steel	

	<b>F167</b>	<b>D167Q</b>	<b>D167RY</b>	<b>N167</b>	<b>F267</b>	<b>N267</b>
Input Voltage	120V	120V	120V	120V	230V	230V
Frequency	50/60 Hz	60 Hz	50/60 Hz	60 Hz	50/60 Hz	60 Hz
Output Ports	2	2	4	4	2	4
Capacity	200"EL	Shielded Cable	200"EL	300"EL	200"EL	300"EL
Recommended Power Supplies (MEB and MEJ)						

## 4. INSTALLATION

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### Grounding

1. It is essential that the machine frame be grounded either through well-grounded electrical conduit or by heavy copper wire connecting the frame to a water pipe.
2. The static neutralizing bar metal casing must be grounded. Grounding the casing is necessary to avoid shock hazard and ensure proper operation. Grounding is provided through the metal mounting clamps and support brackets. Metal mounting brackets must be tightened securely to the static bar casing to ensure electrical bonding. The metal mounting clamps and support brackets must be secured to the machine frame to provide electrical ground.



### **CAUTION! – ELECTRICAL SHOCK HAZARD**

The static neutralizing bar metal casing must be grounded to avoid shock hazard and to ensure proper operation.

If the static bar must be mounted on an insulative or non-conductive material (such as plastic), install a wire to connect the mounting bracket of the 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.

### Mounting Static Neutralizing Bars

1. Place each static bar so that it extends across the width of the material to be neutralized.
2. The bar's ionization points must face the material to be neutralized.
3. For optimum performance, mount static bars as follows:
  - MEB Static Bars: 1/2" to 1" away from the material to be neutralized
  - MEJ Static Bars: 1/4" to 3/4" away from the material to be neutralized
4. There must be a background of free air space in order for the static bar to neutralize static charges properly.
5. Static bars may be located above and/or below a web.
6. Locate static bars after the material has received its static charge. If the material is subject to ongoing friction, additional bars may be needed.
7. Use mounting brackets provided with each static bar, locating each so that no ionization points are covered.

## Mounting Power Supplies

1. Mount power supplies to the machine frame (preferably away from operator contact) or to a nearby wall or post.

## Installing High Voltage Cables

1. Route the high voltage cables attached to each static bar along the machine frame or wall to the power supply.
2. Guide the cables back to the power supply. All cables must be kept a minimum of 1/4" away from machine frame and parts, walls and ceilings. If this is not possible, encase cables in plastic insulating tubing (available from Simco-Ion).
3. Install spring-loaded cable connectors on the free end of each cable, as described on the enclosed SL instruction sheet.
4. 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.
5. Insert the cable (with spring loaded connector attached) into the power supply high voltage connection. Screw in the knurled plug to secure the cable.



**NOTE!** – FINGER TIGHTEN ONLY.

## **5. OPERATION**

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Before energizing any 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 each power supply to operate the static neutralizing bars.

## 6. TROUBLESHOOTING

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**NOTE!** – Only qualified service personnel are to perform trouble-shooting 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.



**NOTE!** – 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 Tension Voltage Detector (Simco-Ion #4050556) 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 the 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**

De-energize all power supplies before performing any maintenance tasks.



**CAUTION! – FIRE HAZARD**

Never energize a power supply with any trace of alcohol remaining on the equipment.

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 it 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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5050227	MEB Bar mounting kits (contains 2 brackets and hardware)
5050228	MEJ Bar mounting kits (contains 2 brackets and hardware)
5050001	SLCC HV Connector Kit
4800061	Plastic Insulating Tubing
4670204	Cleaning Brush
4050556	Tension Voltage Detector

## **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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Hatfield, PA 19440

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