



An ITW Company

IQ Power Nozzle

Static Neutralizing Nozzle

INSTALLATION AND OPERATING INSTRUCTIONS

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1. SAFETY WARNINGS



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



CAUTION – Statements identified with a **CAUTION** indicate minor or moderate injury is possible.



WARNING – Statements identified with a **WARNING** indicate serious injury is possible.



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. Use only in conjunction with IQ Power BPS or IQ Power LPS power units
4. To prevent damage to the nozzle, observe and follow all operating specifications



CAUTION – Electrical Shock Hazard

Always disconnect power supply before connecting or disconnecting nozzles. Avoid touching the nozzle when power supply is energized.



WARNING – Fire Hazard

Do not install or operate static neutralizing nozzle in close proximity to any flammable solvents or flammable materials.

2. DESCRIPTION

Electrostatic charges occurring during production processes often result in dust and debris being attracted to work in process, resulting in defects or contamination. The IQ Power Nozzle, used in conjunction with an IQ Power supply, provides static neutralization and cleaning ability. By neutralizing static charges, dust and debris are released from surfaces. When used in conjunction with compressed air the IQ Power Nozzle has an excellent range and blow off force. In addition to contamination control, the IQ Power Nozzle is excellent for sheet separation, even at high speed. The nozzle can also aid in sheet stacking operations, making it a simple and accurate process.

The static neutralizing nozzle features current limiting at each individual ion emitting pin to minimize the risk of hazardous electrical shock if the nozzle is touched while in operation. This safety feature does not compromise the IQ Power Nozzle's ability to neutralize static charges. The emitter pins are made of a special alloy to extend the longevity and sharpness of the points, providing optimal performance of the static bar.

The IQ Power Nozzle is intended for use with the IQ Power BPS or LPS. These high voltage power supply module provide microprocessor controlled high voltage DC output to the nozzles. This allows direct conditional monitoring of the IQ Power Nozzle condition and numerous communication and connectivity options.

Features

- Four nozzles can be installed on a single cable
- Flexible mounting options with a position locking bracket
- Nozzle condition can be monitored with IQ Power BPS or LPS
- Quick discharge times, fast static neutralization
- Slotted air outlet for high blow off force
- High-efficiency perforated air outlet for low air consumption & wide area coverage
- IP-66 rated

3. SPECIFICATIONS

Operating Voltage	±7 kVDC, max
High Voltage Connector	IQ Power Speed
Operating Temperature	140°F (60°C), max
Humidity	No dewing permissible
Air Connection	1/8" NPT push-to-connect fitting for use with 1/4" OD tubing
Air Pressure	80 psi, max (CDA is recommend for longevity)
Air Consumption	Slotted: 10 scfm @ 30 psi; Perforated: 1.2 scfm @ 30 psi
Enclosure	Glass filled nylon

4. INSTALLATION

Unpacking

Carefully remove equipment from the carton and inspect the contents.



NOTE: If any damage has occurred during shipment, notify the local carrier at once. A report should also be forwarded to Simco-Ion, 2257 North Penn Road, Hatfield PA 19440. See Section 9 (Warranty) for Return Shipment information.

Determining Nozzle Location

Through use of the flexible mounting bracket, positional locking detents, and straight or right angle air fitting, the IQ Power Nozzle can be mounted in a variety of locations and positions.



WARNING – Fire Hazard

Do not install or operate static neutralizing nozzle in close proximity to any flammable liquids or solvents.



WARNING – There must always be a dead end nozzle with a dead end plug installed on every run of cable. Bare cable cannot be left out in the open.



WARNING – Do not mount the nozzle closer than 4” to any grounded surface or machine frame.



NOTE – Up to 4 nozzles, one dead end and three in-line, can be installed on one cable

Routing the High Voltage Cable

The high voltage cable must be routed to make sure that it does not make contact with moving machine parts. Avoid mechanical deformations and bending radii smaller than 1.0” (25 mm). To prevent damage, do not route the high voltage cable along the floor. It is recommended to route cable where the nozzle(s) will be, then mark each nozzle location on the cable before stripping the cable for nozzle termination.

Terminating the Nozzle(s) on the Cable



WARNING – Insulation of inner white wires CAN NOT be damaged in any way while removing the black outer jacket. Any damage to insulation compromises the integrity of the insulation and may result in failure.



WARNING – Once the white insulation of the wires has been pierced by the pins in the back of the nozzle, that section of cable CAN NOT be reused and must be removed.

After determining where each nozzle will be placed on the cable, the black outer jacket of the cable must be removed. Strip lengths will vary based on a dead end or pass through termination.

For A Dead End Nozzle

1. Measure 2.5” from the end of the cable.
2. Carefully cut down the middle (the indent region between the interior wires) of the cable’s black outer jacket to open up the black outer jacket. Fold back and cut off the black outer jacket.
3. Using the dead end plug included with the nozzle as a guide, cut approximately 5/8” off of one of the white wires.
4. Place the dead end plug in the nozzle cap, the plug will just fall inside of the cable pockets in the cap. Lay the two white wires into the nozzle cap, making sure that the end of each wire is in contact with the dead end plug.
5. Press nozzle body down onto the cap, making sure that the wires seat into the round pockets in the gaskets.
6. Turn the nozzle over, and using the two screws provided, firmly secure the cap to the nozzle body. The gaskets should slightly bulge out from the seam, indicating that a good firm seal has been made.

For An In-Line Nozzle (up to 3 additional nozzles on one cable)

1. Measure 4” on the cable, centered on where the nozzle is going to be placed.
2. Carefully cut down the middle (the indent region between the interior wires) of the cable’s black outer jacket to open up the black outer jacket. Pull white wires out from the black outer jacket and carefully cut off the black outer jacket.
3. Position the two white wires into the cable pockets in the cap.
4. Press the nozzle body down onto the cap, making sure that the wires have seated into the round pockets in the gaskets.
5. Turn the nozzle over, and using the two screws provided, firmly secure the cap to the nozzle body. The gaskets should slightly bulge out from the seam, indicating that a good firm seal has been made.

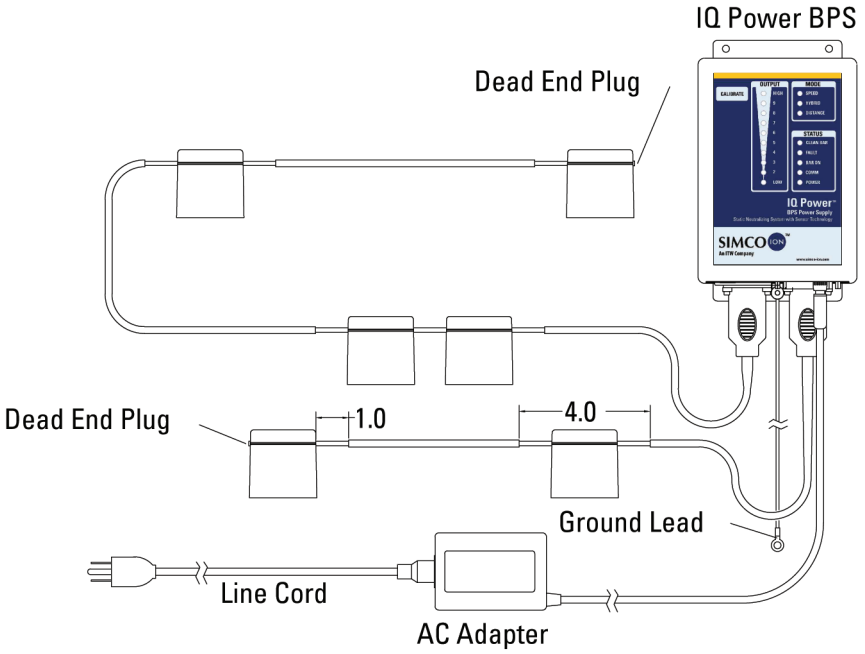


Figure 1. IQ Power BPS and Nozzles

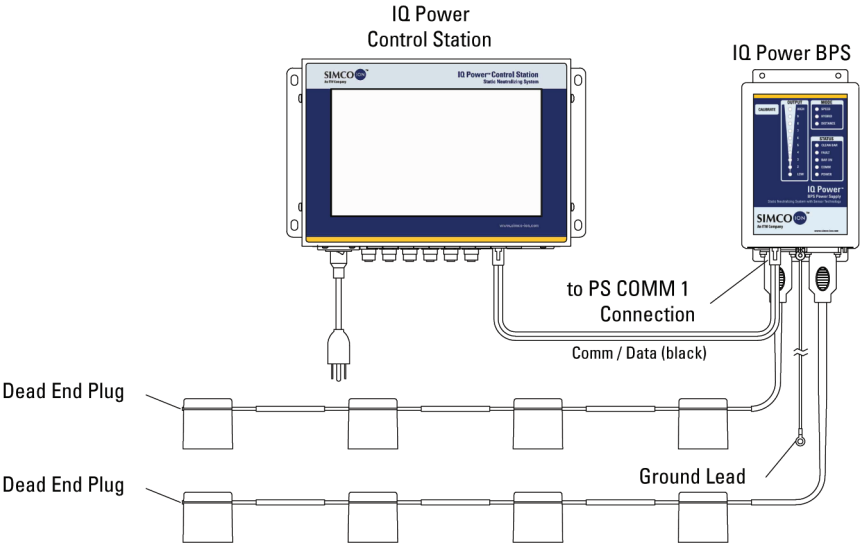


Figure 2. IQ Power Control Station, BPS and Nozzles

Making Air Connection and Mounting Nozzle(s)

To install the mounting bracket, place bracket over the air inlet on the back of the nozzle. Install desired air fitting through hole in bracket and thread firmly into the back of the nozzle. If using the right angle fitting, install the provided spacer over the threads of the fitting and thread firmly into place. It may be necessary to use a wrapping of PTFE sealing tape on the air fitting to ensure no air leakage. Once the bracket has been secured to the back of the nozzle in its desired position, mount the nozzle into place. The slots in the bracket will accommodate #10 or M5 hardware. Once in place, run the air line to the back of the nozzle and press into the fitting. Supplied fittings will accommodate 1/4" OD tubing.

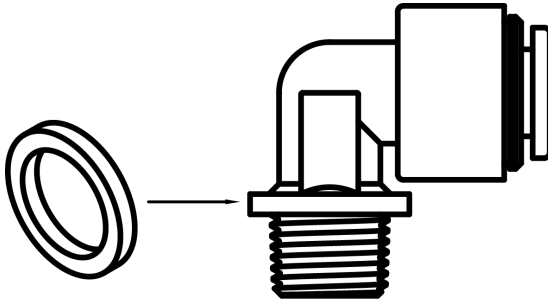


Figure 3. Spacer Installed on Right Angle Fitting

5. OPERATION



CAUTION – Electrical Shock Hazard

Do not touch nozzle during operation.

1. Before energizing any power supply:
 - Ensure that all power supplies are properly grounded.
 - Ensure that all nozzles have been properly located, positioned and installed.
 - Ensure all requirements printed in the applicable power supply instructions have been fully complied with.
2. After the above checks have been performed, simply energize each power supply to operate the nozzles.
3. To ensure proper system monitoring, run the calibration cycle on the power supply. Repeat any time nozzles are added or removed from the system.
4. Always turn the power supply OFF when the system is not in use. For safety and ease of operation, it is recommended to connect the power supply line cord to the electrical system of the machine in such a manner that the power supply is only energized when the machine is in operation.

6. MAINTENANCE



NOTE – Only qualified service personnel are to perform maintenance tasks.



CAUTION – Electrical Shock Hazard

De-energize all power supplies and lock out, if possible, before performing any maintenance tasks.



WARNING – Fire Hazard

Do not turn on power supply with any trace of alcohol or mineral spirits on the equipment. Allow all alcohol or mineral spirits to evaporate.

The accumulation of contamination on the ionization emitter points and nozzle surfaces will reduce neutralizing efficiency, therefore it is recommended that maintenance of the system be performed when the Clean Bar indicator on the display module illuminates or every three weeks, whichever comes first. Dirty environments may require more frequent cleaning. Maintenance should be performed by qualified service personnel only.

Cleaning the Nozzle

A clean brush with nylon bristles should be used to keep the ionization emitter points of the nozzle clean. Periodic use of the brush will prevent deposits from accumulating on the points. The emitter points must remain sharp for optimum operation.



NOTE – Do not scrape points with any hard or sharp object that may damage points.



NOTE – Do not remove nozzle from the high voltage cable. Doing so will compromise the insulative properties of the cable.

- A. Turn off power supply.
- B. Remove dirt particles deposited on the nozzle with a dry, stiff nylon bristle brush.
- C. Blow off the nozzle with clean, dry compressed air.
- D. Remove resistant coatings deposited on nozzle by wiping with isopropyl alcohol or mineral spirits applied to a clean cloth. Apply isopropyl alcohol or mineral spirits to a stiff nylon bristle brush and thoroughly scrub the ionization emitter channels of the nozzle.
- E. Blow nozzle dry with clean, dry compressed air and ensure the nozzle is completely dry before re-applying power to the nozzle.

F. With an IP-66 rating, the nozzle body may also be sprayed down without risk of moisture entering the high voltage region.



NOTE – Do not soak nozzle or related components in alcohol or mineral spirits. Do not use harsh solvents such as lacquer thinner, naphtha or acetone. They will damage the nozzle housing and epoxy.

7. REPLACEMENT PARTS

Part Number	Description
4016336	10' Cable Assembly
4016337	20' Cable Assembly
4016338	30' Cable Assembly
4110577	Mounting Bracket Assembly

8. WARRANTY

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 by 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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