

## Static Electricity – Be In the Know

January is the month to learn more about static electricity. One day in January is even set aside in observance of static electricity (January 9th, this year). Some of us aren't aware of how static is caused or how to help prevent it so here is a tidbit of information for you.

Static electricity is different from the electrical current carried by wires through a building or transmitted by the electric companies. It is produced when the positive and negative charges of an atom are out of balance. The atoms of some materials hold their electrons tightly. These materials, such as plastic, cloth or glass are insulators. While electrons of these substances do not move very freely, the electrons of other materials such as metal, move more freely and are called conductors.

When two insulators come in contact and separate, or when there is friction between the two, an electron exchanges causing positive and negative static charges. Opposites do attract. Atoms with a positive charge become attracted to atoms with a negative charge. We can see the evidence if we rub a balloon on the hair on your head. When we pull the balloon away, the hair clings to the balloon because they have opposite charges. Remove the balloon and the hair may stand on end. In this circumstance, the hairs have the same charge (either positive or negative) entirely and are repelling each other.

At some point, these charges need to be put back in balance and the static electricity is discharged. The release and resulting shock occurs when an insulator comes in contact with a conductor such as a piece of metal.

**Static electricity causes issues in our plants as well. Among the problems caused by this force are:**

- Dust clinging to product
- Product clinging to itself, rollers, machine beds or frames
- Materials tearing, jamming or curling
- Sheet feeding problems
- Hazardous sparks or shocks
- Print quality problems

EXAIR offers a large selection of systems for total static control. Our Gen4 static eliminators have undergone independent laboratory tests



to certify they meet the rigorous safety, health and environmental standards of the USA, European Union and Canada that are required to attain the CE and UL marks.

By combining our engineered airflow products with ionizers, this gives us the ability to eliminate a static charge quickly and from great distances. Laminar flow airstreams make it possible to blow away contaminants and eliminate the charge that attracts them.

Learn more online about our large selection of **Gen4 Static Eliminators:**



**Super Ion Air Knife** (<https://exair.co/05-siak>)



**Standard Ion Air Knife** (<https://exair.co/05-stdiak>)



**Super Ion Air Wipe** (<https://exair.co/05-siaw>)



**Ion Air Cannon** (<https://exair.co/05-iac>)



**Ion Air Gun** (<https://exair.co/05-iag>)



**Ion Air Jet** (<https://exair.co/05-iaj>)



**Ionizing Bars** (<https://exair.co/05-ib>)



**Ionizing Point** (<https://exair.co/05-ip>)

In addition, check out our new **Intellistat® Ion Air Gun**. It is a lightweight solution for static and particulate elimination in sensitive processes found in laboratories, electronics testing or clean rooms. It has exceptional static decay rates capable of reducing 5000 volts to less than 500 in under one second. The Intellistat is rated Class 5 for clean rooms and controlled environments per ISO 14644-1. (<https://exair.co/05-iiag>)



## Super Air Nozzles Fill the Bill and More!

A manufacturing company needed an OSHA compliant way to blow off their product. Reducing noise levels and compressed air use were also desired.



**BEFORE EXAIR:** Before EXAIR, the operators in this facility were using commercially available rubber tips on their blow guns. These tips would become damaged quickly and were not OSHA compliant for 30 psi dead-end pressure.

The tips were used at 14 different stations for varying times. Nine operators were using the tips for 1 hour every 8 hour shift, while the other five operators were using them for 30 minutes every 8 hour shift. There were two 8 hour shifts per day.

**AFTER EXAIR:** After examining the applications, two different engineered Super Air Nozzles were selected to replace the rubber tip nozzles. The rubber tips used more air than needed for the job of blowing off debris. EXAIR's **Pico** and **Nano Super Air Nozzles** replaced the rubber tips. Eight operators use the **Model 1109SS-NPT Pico Super Air Nozzle**, while the other six operators use the **Model 1110SS-NPT Nano Super Air Nozzle**. Five of those operators use them for 30 minutes per shift while the other uses it for 1 hour per shift.

After replacing the rubber tips with the engineered Pico and Nano Super Air Nozzles the blow guns were able to comply



with the OSHA standard 1910.242(b) for dead end pressure. The nozzles also lowered the ambient noise level by up to 15.2 decibels. This helped to bring the environment into compliance of the OSHA allowable noise exposure. To top off the application the customer was able to **save 3,319.2 SCFM** per day of operation. This reduced compressor use during production, which will minimize compressor wear.



**EXAIR unconditionally guarantees its cataloged products for 30 days.**

If you are not satisfied for any reason within that time, you may return the product for full credit with no restocking charge.



## New Application Checklist

EXAIR products solve a variety of problems. Please call our Application Engineers at 1 (800) 903-9247 or e-mail them at [techhelp@exair.com](mailto:techhelp@exair.com) for assistance with yours.



### Super Ion Air Knife Removes Static and Particulates

Before coating an aluminum tray, our medical analysis customer needed to remove small dry powder beads from the surface of the tray to prevent defects. The production area of the trays is extremely dry at 2-5% relative humidity. This dry environment also produces a good deal of static to contend with and it was attracting these powder beads to the surface of the ungrounded aluminum tray. The customer added a tray washing station using only a **Model 112118 18" (457mm) Super Ion Air Knife** and **Power Supply** to remove the static charge and gently blow off the powder which was captured by a vacuum flow of air from a down draft table. The blow off station easily removed the debris and reduced any defective trays.

**GO TO** [https://exair.co/05\\_siak](https://exair.co/05_siak)



### Super Ion Air Wipes Clean Away Debris, Remove Static

Customer is a manufacturer of material handling and storage products for several industries. They have a composite material pultrusion line that produces a continuous 1-3/4" OD tube. This tube has small slits cut in it along the length. The composite material generates quite a static charge as it moves and is slitted. Thus, the shavings generated from the slitting process tend to stick to the outside of the tube. A **Model 8264 4" (102mm) Super Ion Air Wipe** with **Power Supply** will provide a 360° ionized airflow around the OD of the tube to remove all the chips and eliminate the static charge before moving on to subsequent steps in the manufacturing process.

**GO TO** [https://exair.co/05\\_siaw](https://exair.co/05_siaw)



### GET4 Static Eliminator Promotion

When the temperature outside drops and humidity plummets, static electricity problems are sure to make bad things happen, leaving you to deal with the associated production headaches.

**CALL (800) 903-9247**

Order by March 31, 2022 and receive a free handy dandy AC Sensor

**EXAIR.com**

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To learn more go to:

<https://exair.co/05sepromo>

