Company brochure

Anti-Dust/-Static Measures

Sophisticated ion control reliefs you from dust and static problems.

Static electricity removal

Foreign matter removal

Clean environment construction

TRINC®

TRINC Corporation

Specialist in Anti-Dust/-Static Measures

Correct understandings of static electricity, ions, and foreign substances and a never-compromise attitude lead to innovative technologies and drastic improvement effects.

We, TRINC, are a manufacturer specializing in foreign matter and static electricity countermeasures. We do our utmost to support those who are working to solve problems at manufacturing sites. Conventionally, static electricity countermeasures, foreign matter countermeasures, and cleanroom facilities have been treated separately as separate fields. However, considering that static electricity is the main cause of foreign matter adhesion, it is clear that these measures must be implemented simultaneously at a high level in order to essentially solve foreign matter and static electricity problems.

TRINC is the only manufacturer in the world that comprehensively understands all of the above, proposes countermeasures, and provides the equipment to achieve them. We help solve problems by understanding and controlling the behavior of foreign matter, static electricity, and ions. We develop and market a wide variety of products to reduce defects and improve productivity, with a focus on ionizers that remove static electricity, cleanroom equipment and clean benches to create a clean environment, and dust removal equipment to remove and collect foreign matter attached to products and equipment.

Static electricity and foreign matter, as well as ions which are indispensable for countermeasures, cannot be detected by the naked eye. Furthermore, static electricity is often considered as an elusive entity because its state can easily change depending on the surrounding environment, and there have been no definitive countermeasures to deal with it.

TRINC has discovered innovative countermeasure methods that are completely different from the conventional wisdom through correct and deep understanding of the behavior of static electricity, ions, and foreign substances based on principles. We have systematically compiled our static elimination technologies, such as No-Blow Ionizing® and Space ionizing by Phased Array Ionizing®, as well as clean environment construction technologies and dust elimination technologies that apply static elimination technologies, into the TRINC METHOD. These methods have been adopted in research, development, and manufacturing departments around the world, contributing to the solution of foreign matter and static electricity problems.

Core competence of TRINC

We solve the problems of foreign matter and static electricity from various angles with a wide variety of products that have the highest performance and variation, making full use of our industry-leading ion control technology.

We provide world-first technologies and countermeasure equipment based on new ideas that are not bound by conventional wisdom, such as No-Blow Ionizing®, Space ionizing by Phased Array Ionizing®, Leak-Free Ionizing®, Wireless Ground®, etc.

In addition, they are characterized by high operability and maintainability, and they will always magically demonstrate high improvement effects.

TRINC is committed to the “positivism”. We start with an investigation of the current situation to determine the causes of static electricity problems, dust, and foreign matter defects. Through subsequent studies, we propose problem-solving concepts and actual solution methods.

We work together with the customer on a series of tasks and provide thorough support until the effectiveness of the solution is confirmed.

TRINC's Business Field

Contribute to the global and social environment by improving the manufacturing environment

TRINC's Phased Array Ionizing® is awarded for most effective and best improvement
"2022 Energy Conservation Grand Prize, Minister Prize of Economic, Trade and Industry"

Contribution to manufacturing site

- Prevention of foreign matter defects
- Electrostatic breakdown prevention
- Improvement of product quality
- Prevention of equipment malfunction
- Electric Shock Prevention
- Fire and Explosion Prevention
- Energy-saving measures against foreign matter and static electricity

Main applicable industries

Electronics
- Electric parts
- Semiconductors
- Electric devices
- Display
- Battery
- Printed circuit board
- Electric wire

Optics
- Optical devices
- Lens
- Optical fibers
- Optical coating
- Other optics

Machinery & Equipment
- Automobile
- Processing machine
- Assembly equipment
- Precision equipment
- Painting
- Printing
- AGV/AMR

Chemicals
- Resin molding
- Film and Foil
- Glass
- Rubber
- Ceramic
- Texture and Paper
- Chemicals

Medical and Food
- Medical devices
- Pharmaceutical
- Biotechnology
- Food
- Hygiene
- Cosmetic

Others
- Housing facilities
- Stationery
- Sports goods
- Toys
- Ornament

New Concept

Clean environment construction

Constructing a new standard clean space free from foreign matter and static electricity problems

Prevention of "Foreign matter adhesion" × "Static electricity"

Cleanroom (CR)
- CR unit (Self standing model)
- CR unit (Linkage model)
- CR unit with booth
- Room-less CR (Phased Array Ionizing®)

Clean bench
- High performance clean bench
- Air-blow bench
- Portable clean bench
- For conveyor

Air shower (AS)
- Door-less ion AS
- Door-less ion AS (Wide model)
- Door-less ion AS (For ultra-clean environment)
- Ion dust removal gate
- Ion air shower
- Ionizers for air shower

Desktop clean
- Dust / Static zero kit
- Dust vacuuming mat

Storage and transportation
- Clean storage vehicle
- Clean warehouse with Phased Array Ionizing®

Cleanliness monitoring

Cleanliness measurement
- Space cleanliness monitor
- Multi-point cleanliness monitor

New Standard

No-Blow Ionizing®
Phased Array Ionizing®

Powerful static elimination of all static charges from products, equipment, people, moving objects, and dust without air flow assist

Static eliminator (Ionizer)

Phased Array Ionizing®
- For entire floor
- For general purpose
- For desktop
- Explosion-proof approval model
- Heat resistant model

No-Blow Ionizing®
- Bar type
- Spot type
- Flexible type
- Desktop type

For particular environment
- For nitrogen atmosphere
- For high temperature
- For explosion-proof area
- Plate type
- Tape type

For particular industrial fields
- For resin molding
- For printing
- For powder and grain
- For AGV/AMR or robot
- Wearable type for human body

Static monitoring

Ionizer measurement
- Ionizer tester
- Ionizing effect checker

Static electricity measurement
- Static potential tester
- Multipoint static potential tester

Others

Static application
- Film pasting

New Principle

Foreign matter removal

New principle dust removal method realizes overwhelming dust removal capacity and energy-saving performance

Automatic cleaner

Film / Sheet cleaner
- Film cleaner
- Cut sheet cleaner
- Metal foil cleaner
- Panel cleaner

Tray / Jig cleaner
- Tray cleaner
- Jig cleaner

Packing material cleaner
- Carton cleaner
- Container cleaner

Other cleaners
- Now-woven cloth cleaner
- Tube cleaner
- Wire cleaner
- Small parts cleaner
- O-ring cleaner
- Cup cleaner
- In-bottle cleaner

Manual cleaner

Air blow cleaner
- Air-blow gun type cleaner
- Battery driven model
- Ultra-clean air blow model

Adhesive cleaner
- Adhesive roller cleaner

Vacuum cleaner
- Hard brush type
- Flexible brush type
- Pen type
- Heat resistant type (For metal mold)

New Standard of Anti-Dust/-Static Measures

No-Blow Ionizing®

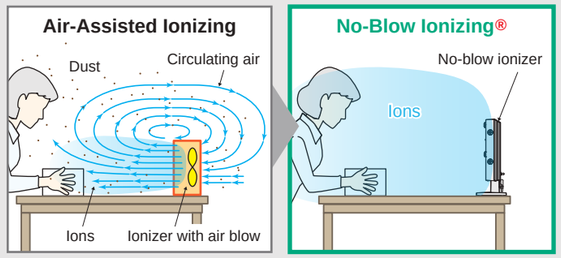
It is a false stereotype that static elimination is only possible with air assist. In fact, air-assisted static elimination, which uses compressed air or fan air, is the enemy of a clean environment. Only ions are needed for static elimination, and no blow is better.

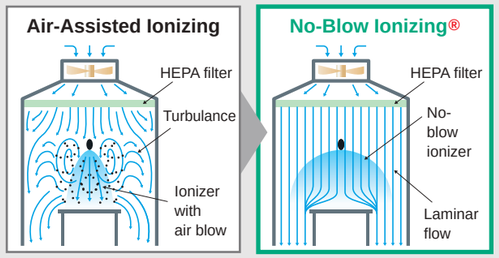
TRINC has proposed “No-Blow Ionizing®” to break through the conventional misconception, and it has been well received at many sites.

No-Blow Ionizing®, preventing particles from being blown up by the wind, is the basis for yield improvement.

Prevents particles from rolling up and blowing onto workpieces

Does not disrupt laminar flow in cleanrooms or clean benches





Powerful ionizing

High-speed static elimination in 0.3 seconds＊1 with high-density ions, that is a feature of the Ion Engine® method

Accurate ionizing

Feedback control by ion sensor realizes accurate static elimination due to high ion balance＊2

Leak-Free Ionizing®

Leakage-free structure prevents risk of electric leakage and remains highly effective indefinitely

Easy maintenance

Unique one-touch cleaner enables all discharge needles to be cleaned within <1 second＊3

Low power consumption

Since no air is used, ultra-low power operation of <10W is possible

Examples of no-blow ionizer

Bar type
TAS-311 BAM

High accurate bar type
TAS-321 BAM

EPA model
TAS-36 BAM-EPA

Desktop
TAS-812 SMT

Small and spot
TAS-112 SPOT

Handheld
TAS-21 GCB

EPA: Explosion-Proof Approval

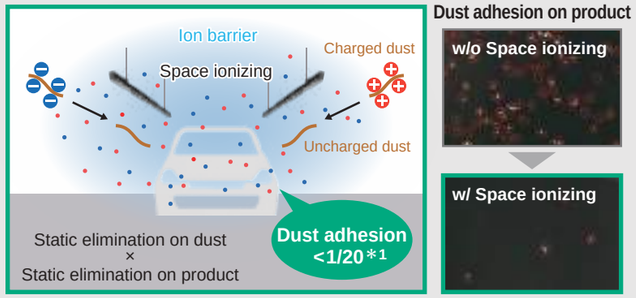
Phased Array Ionizing®

Why does dust adhere to workpieces?

Focusing on this basic question, we analyzed the mechanism of dust adhesion. As a result, it was found that floating charged dust adheres to workpieces. In other words, dust adhesion to workpieces can be prevented by ionizing the space with each floating dust.

Regardless of the presence of floating dust, drastically reducing foreign material defects due to the prevention effect of dust adhesion

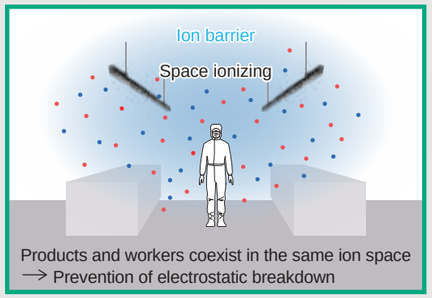
Prevents foreign matter from adhering to products



- Highly effective for insulators, semiconductors, metals, and any other type of materials
- Highly effective for all kinds and sizes of foreign objects
- Energy saving and lower cost than cleanrooms by far

ESD countermeasure without humidification and wrist strap

ESD: Electro-Static Discharge



- Free from wrist straps
- Flexible layout and expansion
- Higher performance, energy saving, and lower cost than humidification by far

Example of phased array ionizers (Space ionizer)

Standard
TAS-811 SFS

High accuracy model
TAS-821 SFS

EPA model
TAS-83 SFS-EPA

High-temperature resistant
TAS-804 SFS-HT

Desktop
TAS-810 SMT-SFS

EPA: Explosion-Proof Approval

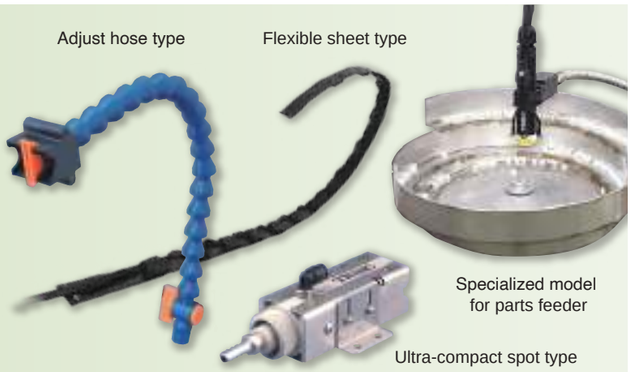
＊1 Actual values measured under our measurement conditions, not guaranteed values. ＊2 Accuracy varies depending on the model, so please select the appropriate model for your purpose. ＊3 Not all products are equipped with one-touch cleaners.

Drastic Improvement Effect Led by Diverse Lineup for Special Purpose

Automatic Machine

For anti-static measures inside equipment or automatic machines, installation flexibility and high static removing capacity are required to be installed within a limited space and to eliminate static electricity on a target object located deep inside the machine.

TRINC's ionizers offer high installation flexibility with palm-sized ultra-compact, ultra-slim, and flexible types, as well as a unique design that considers the behavior of ions to deliver highly concentrated ions precisely to the targeted area. In addition, specialized devices for particular applications, such as ionizers dedicated to parts feeders, lead to solve problems that could not be in the past.



Resin Molding

In the resin molding, static electricity countermeasures are effective throughout the production process, from material loading to product storage after molding. TRINC provides a variety of equipment to help solve static electricity problems. For example,

- PELLET TRINC to prevent pellet supply error
- MOLD TRINC to prevent foreign matter from adhering to molds during mold release
- METAL MODL CLEANER to remove foreign matter from metal molds
- PHASED ARRAY IONIZERs (SPACE IONIZERs) to prevent foreign matter from adhering onto products during storage.

PELLET TRINC prevents pellet feeding errors and uneven coloration of molding


w/o PELLET TRINC

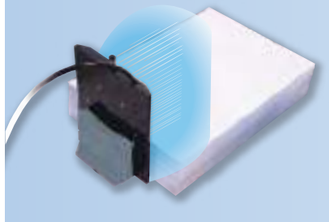
Pellets stuck to inner wall make it impossible to see inside at all.

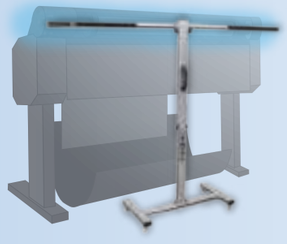

w/ PELLET TRINC

No adhesion to inner wall and accurate detection of remaining pellet volume.

Printing

TRINC contributes to the improvement of paper-end unevenness, the prevention of meandering during paper feeding, and the improvement of inkjet and screen printing quality. We also offer an ideal environment to prevent foreign matter from adhering to printed materials or mixing with foreign matter during lamination.


Solves unevenness of stacked paper end

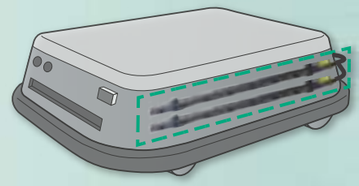

Comprehensively overcomes static electricity problems on printer

Improves print quality by overcoming static electricity problems in the printer head

Moving Object

Neutralizes static electricity accumulated in AGVs/AMRs, robots, and the human body, preventing problems such as malfunctions and electrostatic destruction caused by electrostatic discharge.

TRINC's unique Wireless Ground® technology eliminates the need for cables to be grounded from moving objects, thus enabling anti-static measures without interfering with the movement of AGVs/AMRs or workers.

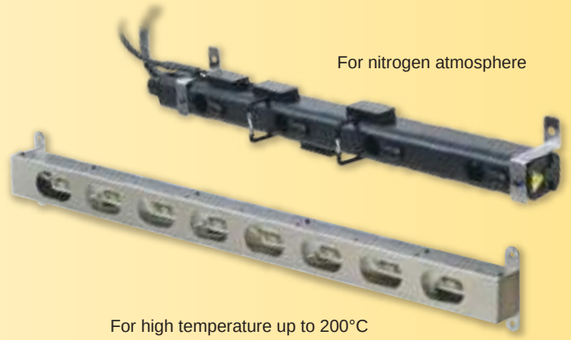

For AGV/AMR


For human body

Under Special Environment

For productions of batteries, OLED panels, and other products, processing in a nitrogen atmosphere is sometimes required to prevent quality deterioration and chemical reactions caused by moisture. In addition, painting and coating involve a process in which products are dried in a high-temperature furnace. In these situations, static electricity is particularly likely to be generated, making countermeasures even more important.

TRINC offers ionizers that can operate in nitrogen atmospheres and in high temperature environments up to 200°C, as well as in general environments and cleanroom applications. The same thorough countermeasures against foreign matter and static electricity can be taken in these special environments.


For nitrogen atmosphere

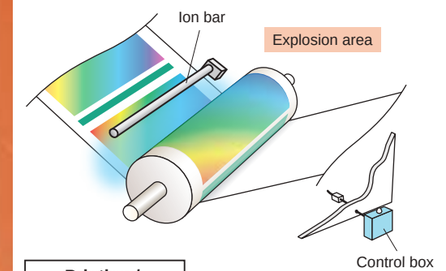
For high temperature up to 200°C

Explosion-Proof Approval

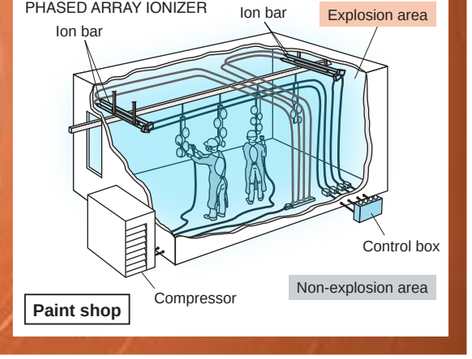
Static electricity in explosion-proof areas not only reduces product quality and productivity, but can also cause ignition of fires and explosions.

Explosion-proof approval ionizers of TRINC can powerfully remove static electricity at any time due to its high safety, robustness, and static elimination capability. Depending on the process, the appropriate model can be selected from space type, bar type, and handheld type. This reduces the risk of explosion and fire accidents and contributes to the realization of safe, secure, and highly efficient production sites.

APPROVED EXPLOSION-PROOF BAR TRINC



APPROVED EXPLOSION-PROOF PHASED ARRAY IONIZER



Ideal Clean Environment Free from Dust and Static Electricity

New Concept

Clean environment construction

Realization of a truly clean environment with zero foreign matter and zero static electricity

TRINC's definition of a "true clean environment" is a space that is free of foreign matter floating in the air, but also a space where, if foreign matter is generated inside, it can be quickly collected before it contaminates the environment without adhering to the product. This is because the risk of dust generation exists everywhere, including when workers enter a room, when materials are brought in, when equipment is operated, and when products are processed. No matter how much care is taken, it is impossible to completely prevent the inflow and generation of these foreign matter.

Foreign matter that have entered or generated are charged with static electricity, so they are attracted to and adhere to products and equipment. In other words, in actual processes, there are foreign matter problems that cannot be prevented by simple cleanliness control alone.

TRINC's device for clean environment construction neutralizes the static charge of foreign matter generated inside and immediately nullifies the Coulomb's attraction by using our original technologies of No-Blow Ionizing® and Phased Array Ionizing®. Furthermore, with this dust prevention effect, foreign matter can be quickly collected before it diffuses into the work area. This ideal clean environment, which combines overwhelming purification and dust prevention capabilities, leads to solutions to foreign matter problems that could not be overcome in a conventional clean environment.

TRINC CLEANROOM UNIT

Outperforms conventional cleanrooms in terms of cost, dust prevention capability, and energy-saving performance

Transforms an ordinary room into an ideal cleanroom. In addition to high cleanliness, the space ionizing prevents foreign matter from adhering, thus preventing more foreign matter defects than in conventional cleanrooms with overwhelming energy-saving operation. Of course, it is also fully equipped with static electricity countermeasures.

Since the system can be installed without any building work, there is no need to stop the operation of the factory. The system can be freely expanded and the layout can be changed to flexibly accommodate future changes in the environment.

TRINC ION AIR SHOWER KIT

Powerful and uniform dust removal from the entire body.

New doorless type air shower that thoroughly prevents the inflow of foreign matter.

Rich ion air is blown evenly from the head to the shoe soles, achieving a high dust removal capacity that is far superior to that of conventional air showers.

In addition, the rectification system quickly collects foreign matter, so unlike conventional air showers that generate turbulence inside, there is no risk of foreign matter flowing outward or reattaching. This thoroughly prevents foreign matter from being introduced into the cleanroom.

In addition to the fact that no installation work is required, the unit can be moved freely on casters, making it possible to use it inside the cleanroom.

CLEAN BENCH

Your desk becomes a class 1 clean bench in just 1 minute.

Transforms your desk into a localized ultra-clean space. Class 100 cleanliness can be achieved in 10 seconds after start-up, and Class 1 in another minute.

The work area is filled with ions, which not only prevents the adhesion of foreign substances generated during work, but also provides full protection against electrostatic breakdown.

Various size model are lined up. Portable and air blow bench models are also available.

CLEAN STRAGE VEHICLE

To prevent contamination during storage and transportation

A highly clean space is created to prevent foreign matter from adhering to products during storage and transportation. Since it operates on battery power, it maintains a Class 1 ultra-clean environment even when moving between buildings. It also has a flow path design that prevents dust from being sucked in when loading and unloading workpieces. High performance ionizers are equipped to prevent static problems.

TAS-213 CSV-HL TAS-212 CSV-HM

Thoroughly Removes Foreign Matter and Collects All

Overwhelming dust removal performance achieved by dense ions, optimal blowing, and thorough collection

Completely non-contact and simultaneous double-sided cleaning*

Compact and slim cleaning head allows free installation at any required location in the production equipment

Drastic defects reduction with energy-saving and low-cost operation

FILM / CUT SHEET / PANEL CLEANER

Non-contact, double-sided cleaning of flat objects such as films, metal foils, cut sheets, panels, etc. The SSO system, which utilizes TRINC's original ion control and airflow control technologies, achieves an overwhelmingly higher dust removal rate than conventional systems. It is also the first in the world to perform double-sided non-contact cleaning of cut sheet workpieces.

TRAY CLEANER

Removes foreign matter on trays for semiconductors, precision parts, medical equipment, etc. The multi-stage ion air blow system enables this cleaner to handle complex three-dimensional pocket shapes.

Equipped with a conveyor, the system can clean trays at high speed with a single switch, achieving high throughput.

Lineup of specialized automatic cleaners for various products and parts


Non-woven cloth


Jig


O-ring


Cup

Bottle


Small parts

Handheld cleaners

Powerful performance assists workers in cleaning operations

A diverse lineup is available, including ion air blower type and vacuum type with static elimination. The high concentration of ions improves removal efficiency and prevents reattachment of foreign matter.


Ion air blow type


Vacuum type with static elimination


Adhesive roller

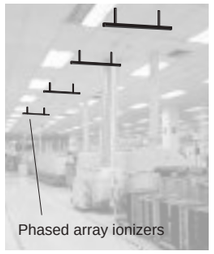
*Depending on the product transfer method, there may be partial contact between the product and the transfer unit.

Improvement Example of TRINC

90% reduction of foreign matter adhesion after semiconductor wafer cleaning process

At a semiconductor wafer fabrication plant, foreign matter adhered to the wafers after the cleaning process causes error detection in inspection process.

After installing 10 units of TRINC's PHASED ARRAY IONIZERs, the number of defects due to dust in the inspection process was reduced by more than 90%. Some days there are no foreign object defects, and the company is considering expanding to other areas.



70% reduction of foreign matter defects in production of copper foil for printed circuit boards

A nonferrous metal manufacturer was having trouble with foreign matter defects in the copper foil production line for printed circuit boards at their plant.

However, when they adopted TRINC's film cleaner FILM TRINC, the number of foreign object defects in the inspection process was reduced by 70%, and they decided to install additional equipment.

30% reduction of foreign material adhesion in catheter manufacturing process

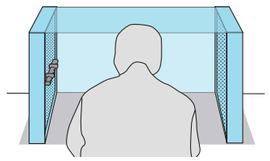
An medical device manufacturer was troubled by foreign object adhesion in the catheter manufacturing process.

As a countermeasure, TRINC's PHASED ARRAY IONIZERs for space ionizing were installed in the guidewire production process and line catheter assembly process. As a result, the customer was very pleased to find that foreign material adhesion was reduced by 30%, resulting in a significant decrease in repair work.

Achieved zero foreign matter defects in the smart glass manufacturing process

CLEAN DESKTOP TRINC, a new clean bench of TRINC, was used in the lens lamination process (prototype process) of a new smart glasses product. As a result, the foreign matter defect rate was reduced to zero and a 100% defect improvement rate was achieved.

Now, the company is considering adopting this device for mass production processes at a new plant, which will begin operation next year.



At an automotive electronics parts manufacturing plant, PHASED ARRAY IONIZER of TRINC, a static electricity countermeasure that replaces humidification, reduces plant LNG consumption by 40%.

Humidification has been a common static control measure because high humidity helps reduce static electricity. However, in some factories, it is not possible to increase humidity, since moisture may adversely affect product quality. In addition, the high cost of electricity and fuel is a problem that needs to be improved as soon as possible.

To address this issue, TRINC has developed a new static control device PHASED ARRAY IONIZERs for space ionizing. This device neutralizes static electricity with ions, eliminating the need for humidification even in dry environments.

Toyota Industries Corporation submitted its successful case study, "Relaxation of Air Conditioning Management in Factories by Phased Array Ionizing®," to the Energy Conservation Awards for 2022 in Japan, and received the Minister of Economy, Trade and Industry Award, the highest prize in the Energy Conservation Grand Prize. In the award, the company reported a 40% reduction in LNG consumption, a significant achievement.

Problems before introduction

The entire factory is air-conditioned for product quality control, but in winter when the humidity drops, a large amount of steam is required to humidify the factory, which increases LNG consumption.

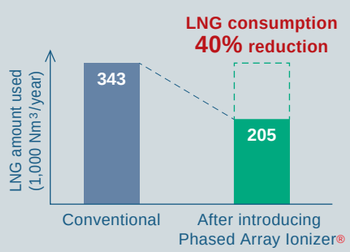
Countermeasure

PHASED ARRAY IONIZERs for space ionizing were Installed at the focused areas where static electricity countermeasures are particularly important.

Result

- Higher level of ESD countermeasure was achieved.
- Relaxed humidity control standards
- 40% reduction in factory LNG usage

	Conventional	After introducing Phased Array Ionizer®	Reduction amount
LNG amount used (1,000 Nm^3/year)	343	205	-138
CO_2 equivalent (t-CO_2/year)	785	469	-316



References: 2022 Energy Conservation Grand Prize, Collection of all application cases on pages 294 – 303

Installation cost of a new cleanroom was reduced to 1/4 of a standard cleanroom.

An automotive parts manufacturer was considering adding a conventional cleanroom to its electrical component manufacturing plant to accommodate the EV shift. However, they were very concerned about the high cost of installation and maintenance, as well as the lack of clarity about the effectiveness of the system.

At TRINC Central Demo Center, the customer was convinced by the purification capacity, Phased Array Ionizing®, and cost of the TRINC CLEANROOM UNITs and decided to adopt them.

More than 90% of dust is removed at air shower cleaning process

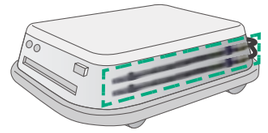
At a semiconductor materials manufacturing plant, insufficient dust removal capacity of existing air showers had become a problem.

During evaluating TRINC ION AIR SHOWER KIT, the customer noticed a clear difference in the foreign matter removal capability as seen by their eyes. Later, when the number of foreign particles attached was counted before and after cleaning process at the customer's site, a dust removal rate of more than 90% was confirmed, and the decision was made to install additional equipment.

AGV charge reduced to 1/3 or less

At a manufacturing plant for EV motors, many AGVs are in operation to transport heavy loads. When running, the AGVs generate an average of -8kV potential on their frames, causing various harmful effects such as stopping the AGVs and electric shocks to the workers. They tried various countermeasures, but they were not effective.

So they installed AGV TRINCs on the vehicles, which solved the problem by reducing the potential of the metal frame to 1/3 or less.



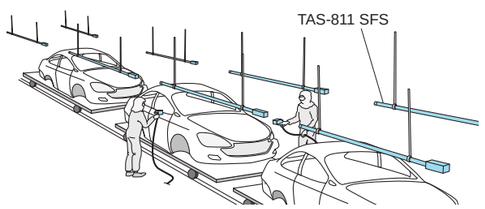
Explosion-proof area for a chemical factory becomes a static-free space

A chemical plant that manufactures electronic materials had an urgent need for anti-static measures in an explosion-proof area where large amounts of solvents and powders are treated. Because the materials were prone to static electricity and could not be humidified, they decided to install TRINC's EXPLOSION-PROOF APPROVAL IONIZERs as the only solution.

Countermeasures were required throughout the plant, including material loading into equipment, centrifugal separation operations, and sorting into storage containers. The static elimination in entire process was successfully completed with space ionizing. In addition, intensive static electricity around workers are eliminated using handheld-type and bar-type explosion-proof approval ionizers.

74% reduction of foreign matter adhesion in the automotive painting process

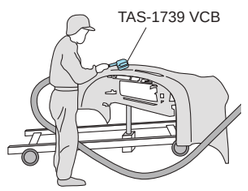
When PHASED ARRAY IONIZERs for space ionizing were installed in the body polishing process of an automobile manufacturer's car body painting line, the rate of foreign matter adhesion was reduced by 74%.



85% reduction in paint failures in automotive bumper paint shop

An automotive parts manufacturer was having great difficulty in eliminating paint defects in their bumper painting process.

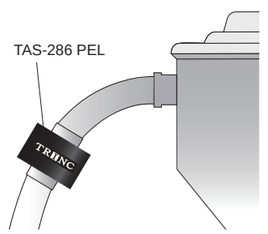
As a countermeasure, the company introduced TRINC's handheld cleaner VACUUM TRINC and succeeded in reducing coating defects by 85%. The customer was surprised at this significant improvement, and the company introduced them to entire production line.



100% improvement in color defects in molded products

In an inspection after molding at a food container molding plant, color tone defects were occurring in 50% of the products.

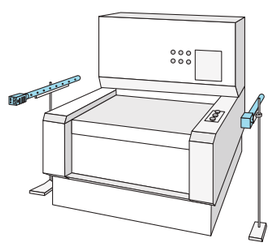
After installing PELLET TRINC, the surface potential of pellets fed into the hopper was drastically reduced from 12kV to 0.8kV, resulting in 0% color tone defects and solving the problem.



Dust adhesion defects during screen printing reduced by 95%

In screen printing on acrylic panels (700 × 1,500 mm), about 20 out of 160 sheets per lot were defective due to foreign matter adhesion.

After installing PHASED ARRAY IONIZERs for space ionizing, dust adhesion was reduced by more than 95%, and on some days by as much as 100%.



TRINC's unique technologies for Anti-Dust/-Static Measures without factory compressed air contributes to the realization of a decarbonized society.

No-Blow Ionizing®

1/100 of the power consumption of an ionizer using compressed air

Conventional ionizers have mainly used compressed air or fan air. This is because it has been believed that ions must be blown by wind to remove static from the target workpieces.

TRINC has rejected this idea, and has worked to develop a technology for No-Blow Ionizing® that powerfully eliminates static by delivering ions over a wide area with no airflow. With the advent of this No-Blow Ionizing®, it has become possible to drastically reduce the power consumption of ionizers.

TRINC's no-blow ionizers

Phased Array Ionizing®

New static electricity control technology replacing humidification reduces LNG consumption by 40%

Plant-wide static electricity countermeasures using humidification are expensive in terms of electricity and fuel costs, and this is an issue that needs to be improved as soon as possible.

TRINC has established a static elimination technology for dry environments by ions. Toyota Industries Corporation's successful case study using this technology was selected for the Minister of Economy, Trade and Industry Award in the Energy Conservation Grand Prize for fiscal 2022 in Japan.

Static-free space constructed using Phased Array Ionizers

CLEANROOM UNIT

Power consumption of less than 1/10 of a conventional cleanroom is possible, with perfect anti-static measures

Cleanrooms require large-scale air conditioning facilities. Also, in order to purify a large space, unnecessary areas must be made clean. Sometimes, continuous operation is required even during the night when the factory is shut down in order to start work immediately at the beginning of the workday.

TRINC has developed original technologies starting with No-Blow Ionizing®, followed by Phased Array Ionizing®, and then Cleanroom units. With overwhelmingly low power consumption, we have realized clean spaces that can be superior to conventional cleanrooms.

FILM CLEANER

Achieved 1/3 of power consumption by adopting a new principle of air blow and a small wind engine

Conventional cleaners consume a great deal of power due to its huge wind equipment. Recently, higher pressure air to remove smaller foreign particles makes the wind equipment huge.

Based on the fact that static electricity is the main cause of dust adhesion, TRINC has developed a variety of powerful cleaners with small power consumption. While employing a compact wind engine, TRINC has achieved extremely high dust removal performance by optimizing the ion and air blow method to suit the workpiece.

Cleaner head

Wind engine

TRINC's Technologies

- Ionizers and clean equipment that do not require compressed air and huge air conditioning units
- Unparalleled countermeasure effectiveness through dense ion control and airflow control
- New technologies developed by recognizing that problems of dust and static electricity must be solved simultaneously.

Contributions to Environment

- Ultra-low power consumption with no need for huge compressors and huge air conditioning equipment
- Improved productivity and reduced uptime by preventing defects and equipment malfunctions
- Saving resources and reducing industrial waste by drastically reducing foreign material defects

Contribution to Society

SUSTAINABLE DEVELOPMENT GOALS

TRINC Library

The books written and published by TRINC provide a wide range of information, from introductory books for learning the basics of static electricity to specialized books describing specific static electricity and foreign matter countermeasures at manufacturing sites and their improvement examples.

We hope to be of some help to those involved in this field through these books.

Fire Defense Seminar

Since TRINC develops countermeasure equipment to prevent fires and explosions caused by static electricity, we have been conducting fire defense seminars at the request of firefighters who monitor and supervise plant safety and people who actually handle hazardous materials at manufacturing site.

To date, we have conducted seminars several cities in Japan. We will continue this activity with the goal of contributing to the realization of a safe and secure society.

Static Electricity Museum

At the Static Electricity Museum located within the TRINC Laboratory, you can learn about the history of static electricity and experience science experiments while having fun learning about the basics of static electricity.

The facility is equipped with many interesting experimental equipment, including the famous Van de Graaff generator, making it a facility that everyone from adults to children can enjoy.

TRINC Science Boys and Girls Fund

TRINC supports the growth of local children through the Static Electricity Museum's public openings and development funds.

By recruiting and awarding research results that have been explored by boys and girls who are interested in science, targeting elementary and junior high school students. We can provide an opportunity for children's talents, which are full of limitless possibilities, to bloom in the future.

Silk screen printing class

Since TRINC products are widely used in the printing industry, we are holding silkscreen classes. We contribute to the local community by providing a place where you can have fun learning about silkscreens and create them freely.

We hope that through TRINC, people in the local community will have the opportunity to feel close to static electricity and experience the joy of expression.

Company Information

Contribute to society, be accepted by society, and be sustained by society

As a pioneer in this field, TRINC's responsibility is to work with people on the front lines of manufacturing who struggle daily with the problem of "foreign matter" × "static electricity" and to never back down until the problem is solved. TRINC's mission is to contribute to the reduction of environmental burden caused by manufacturing activities by providing low-power tools that can solve problems, improve productivity, and reduce waste.

TRINC works day and night to find solutions to the wide variety of manufacturing site problems that are delivered to us every day, and develops technologies to realize them. We continue to pursue the best possible solutions to our customers' problems that cannot be solved by conventional methods, without ever compromising. TRINC's common sense is a spirit of challenge that rejects conventional and erroneous common sense and denies the impossible. The more difficult problems newly emerging in the manufacturing site are frontier fields that we should challenge.

TRINC was the first in the world to recognize that static elimination assisted by airflow, which had been considered conventional measures, was fatal in terms of foreign matter defects and environmental burden. Since then, we have repeatedly tried to find a technology of no-blow static elimination. The solution to the problem of "foreign matter" × "static electricity" without airflow, which will be indispensable in future manufacturing sites, is a specialized field in which TRINC has been deeply involved for the longest time in the world.

In the manufacturing of increasingly diverse and sophisticated products in every field, the problem of "foreign matter" × "static electricity" is a path that cannot be avoided. The standards and environments required vary from field to field, but TRINC, as a pioneer in this field, offers the best solutions to meet the needs of our customers. We will continue to pursue what only TRINC can do, and will spare no effort to grow and contribute to manufacturing sites and the global environment, with the goal of having our customers say, "Without TRINC, we would not be able to manufacture and introduce new products that will revolutionize the world."

Company overview

Company Name	TRINC Corporation
Address	Head Office: 748-37 Okubo-Cho, Nishi-Ku, Hamamatsu-City, Shizuoka-Pref. 432-8006 Japan TRINC R&D Lab.: 719-1 Kamihara-Cho, Nishi-Ku, Hamamatsu-City, Shizuoka-Pref. 432-8007 Japan
President	Makoto Takayanagi
Capital	283,000,000 yen
Employees	52 people
Description of Business	Development, manufacture, and sales of anti-dust/-static measures equipment
Sales Area	Japan, Taiwan, China, ASEAN, Australia, USA, Canada, EU, Eastern Europe, India, Mexico
Central Demo Center	Hamamatsu-City, Shizuoka-Pref. Japan
Demo Center	Shanghai, Suzhou I, II, Taipei, Dusseldorf, Indonesia
Mini Demo Center	Malaysia, Hanoi

Global activity

We have a wide network of distributors not only in Japan but also overseas, so you can use our products with confidence all over the world.

History

1991	Company was founded in Hamamatsu-City.
1994	Received an honorable mention from the Shizuoka-Prefectual governor.
1999	Developed a static ionizer bearing own brand "TRINC".
2005	Head office moved to Hamamatsu Technology Industrial Park.
2005	Awarded "Entrepreneur's Outstanding Performance Award" by the New Venture Business Institution.
2006	Certified as one of "Vigorous 300 Enterprises Supporting Japan's Tomorrow" by the Ministry of Economy, Trade and Industry, Japan.
2007	Published a book "Static & Dust [Zero] Revolution" (Diamond Press).
2010	Company was awarded for JVA (Japan Venture Awards) by the Organization for Small & Medium Enterprises.
2011	Chairman, Makoto Takayanagi was certified as one of "Meister of the Making-Things" in Hamamatsu by Hamamatsu-City.
2011	Chairman, Makoto Takayanagi acceded to an adjunct and part-time lecturer at Nagoya University.
2017	Chairman, Makoto Takayanagi appointed as Shizuoka Prefecture Founder Growth Support Mentor.
2017	Recognized as Shizuoka Prefecture Growth Support Company.
2018	Chairman, Makoto Takayanagi was presented the Order of the Rising Sun, Silver Rays Award.
2019	Set up TRINC Central Demo Center.
2020	Started operation of TRINC Science Boys and Girls Development Fund.
2021	Set up TRNC R&D Lab..
2022	Makoto Takayanagi assumes the Chairman of TRINC CORPORATION.

TRINC Central Demo Center

You can see the effectiveness and operation of "foreign matter" × "static electricity" countermeasure equipment.

1. Full lineup with all products exhibited and demonstrated
2. Demonstration to intuitively capture the invisible behavior of static electricity, ions, and foreign substances.
3. You can hold the equipment in your hands and check its effectiveness and usability at the Demo Center.
4. You can check in detail what you want to see, focusing the part with detailed explanations in the online remote Demo Center

Remote demonstration

Demonstration using actual equipment at the Demo Center

We will hold a seminar on "Foreign Matter" × "Static Electricity" countermeasures.

1. Explanation of TRINC's original countermeasures and devices
2. We can hold from individual seminars to large seminars for dozens of people
3. Demonstrations linked to the seminar contents can be experienced at the same time to deepen understanding

Seminar room

Seminar with full demonstration

Online demo center

Delivering realistic, live coverage around the world

With Remote Customer Demonstration (RCD), you can experience the TRINC Central Demo Center online from anywhere in the world.

Here are some of the demonstrations prepared.

■ PHASED ARRAY IONIZER

Experience the effect of removing static electricity from the human body and preventing foreign objects from adhering.

■ CLEAN DESKTOP TRINC (CDT)
■ AIR-BLOW DESKTOP TRINC (ADT)

Experience amazing purification ability and prevention of foreign invasion from outside

■ ION AIR SHOWER KIT

Experience the performance by comparing with conventional air showers from both theoretical and experimental perspectives.

■ FILM TRINC
■ TRAY CLEANER

Experience how foreign matter is removed from film and trays with actual equipment

■ CLEANROOM UNIT

Experience how an ordinary room is transformed into a cleanroom and the prevention effect of dust adhesion achieved with space ionizing.

■ Extra exhibition) Static Electricity Museum

Many science experiment sets related to static electricity are also on display. Come back to your childhood and enjoy them.

719-1 Kamihara-Cho, Nishi-Ku,
Hamamatsu-City, Shizuoka-Pref.
432-8007 Japan
TRINC R&D Lab.
TEL +81-53-401-1088

Click here to make a reservation

Access:

- Approximately 15 minutes from Hamamatsu-Nishi IC by car.
- Approximately 25 minutes by taxi from JR Hamamatsu Station

TRINC Corporation

748-37 Okubo-cho Nishi-ku Hamamatsu-city Shizuoka-pref 432-8006 Japan
TEL: +81-53-482-3412 FAX: +81-53-482-3414
URL: https://www.trinc.co.jp/english/ E-mail: inq@trinc.co.jp

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