VESSEL®
Mark of Quality

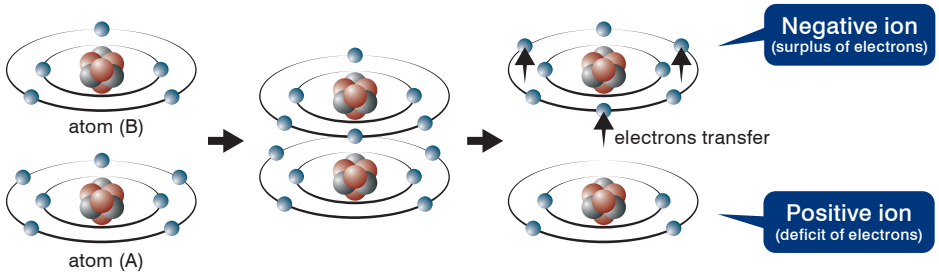
Anti-static

Compact, Easy Solutions

THE STATIC ELECTRICITY

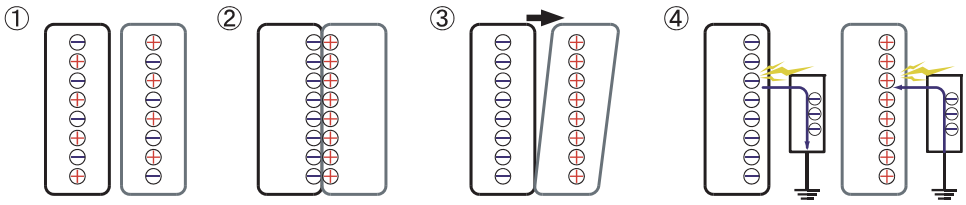
Theory

The static electricity comes from the transfer of electrons between two or more atoms becoming electrically unbalanced.

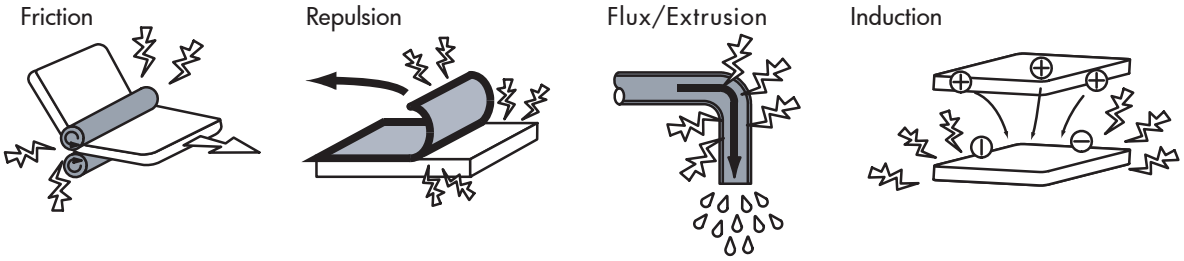


How is it created?

The static electricity is created after contact between two materials (which at least one of them is an insulator).
The static electricity level depends on humidity, materials, as well as on the pressure, the time, and the surface of contact.
An electric voltage of several kV might be easily generated.

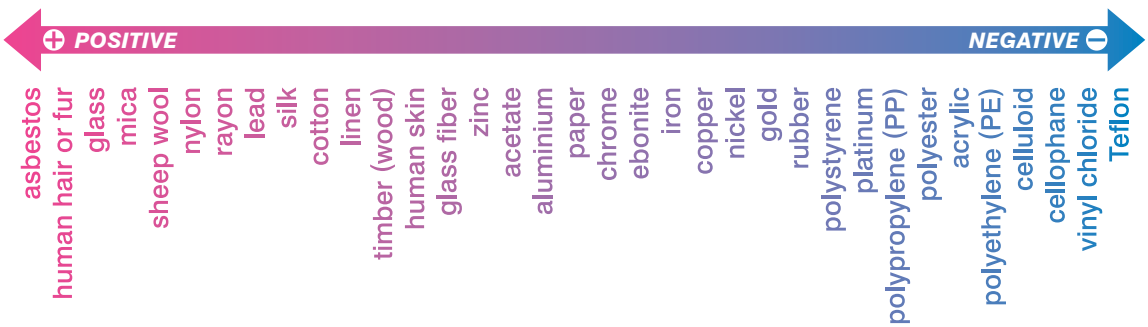


①Usually an object contains positive ions and negative ions. They are same in quantity and keep balance.
②When two objects come into contact, unstable electrons start moving (Charge Transfer).
In such a state, however, electrons just move, and two objects in touch as a whole are not charged.
③Dragging these objects away makes the number of electrons unbalanced.
At this time, one object which receives electrons is negatively charged, while another object which loses them is positively charged.
④Then, the electrons transfer , once the object, either negatively or positively charged, approaches to a grounded metal.



Triboelectric series

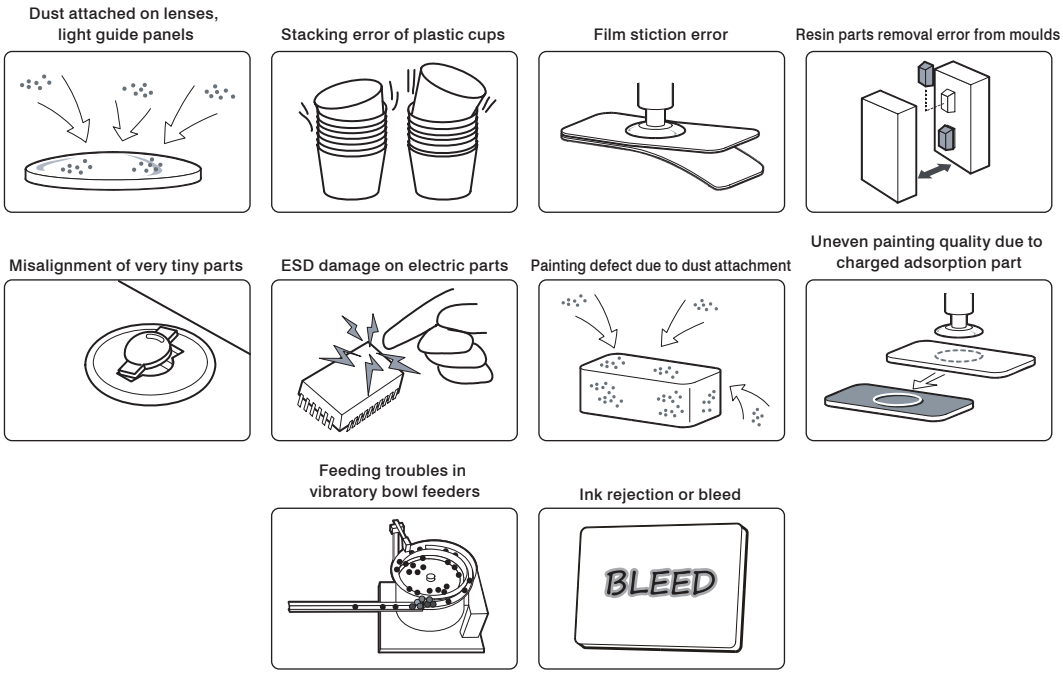
The Triboelectric Series chart shows the relative positive or negative charge of various materials.



Consequences

Three types of problems can result from static electricity:

- Apparition of electric arcs, which can damage the electronic circuits,
- Dust attraction, which can lead to unwanted defaults after parts painting or cause hygiene and cleanliness problems,
- And attraction or repulsion of other materials, which can cause, for instance, printing problems due to the repulsion of the ink or labeling problems due to the unwanted repulsion or attraction of the paper when being positioned.



How is it eliminated?

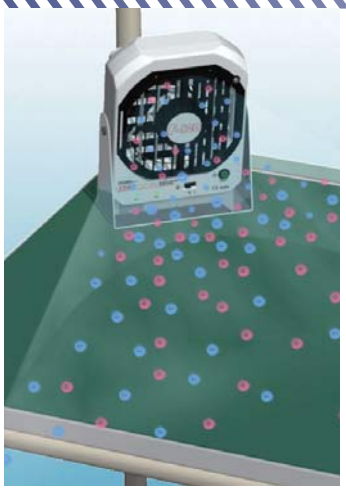
Different methods are used:

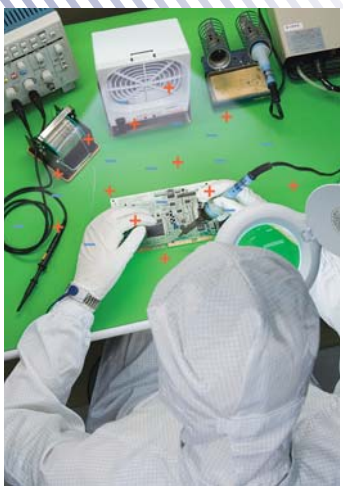
If possible and if it is a conductor, connect the part to the ground:

- The voltage of the part will be equal to 0V. However in certain cases, in order to avoid any sudden discharge, which could lead to electric arcs, it is necessary to use dissipative material with a controlled conductivity.

Otherwise use a ionizer:

- The ionizer will send positive and negative ions to be combined with the postive and negative charges on the targeted surface.
  The ions are created thanks to the corona discharge principle.
  The static electricity elimination is made without any contact.






BLOWER

FOR STATIC ELECTRICITY ELIMINATION

F6CL-E
Ionizing Mini Fan with clip

Clip onto workbench or pillar for pinpoint neutralization

F6ST-E
Ionizing Mini Fan with stand

Compact fan can be installed anywhere for pinpoint neutralization

F12E-E
Fan-type Ionizer

Maintains an ion balance of ±5 V using capacitive-coupled electrode needles

F120R-E
Fan-type Ionizer

Butterfly Louver !
for wider and far reach static erasing area


MANUAL APPLICATIONS IONIZERS

GUN TYPES AND ION PARTS CLEANER

FOR STATIC ELECTRICITY ELIMINATION AND DUST REMOVAL

G7R-E
Gun-type Ionizer

Our most popular ionizing air gun is compact, lightweight and user-friendly

BBZ-E
Gun-type Ionizer

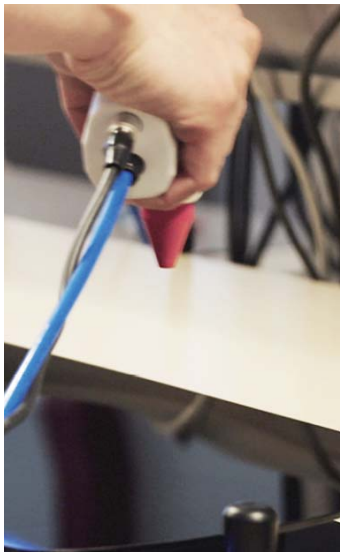
Silent and high durability model ideal for air blowing in wide areas

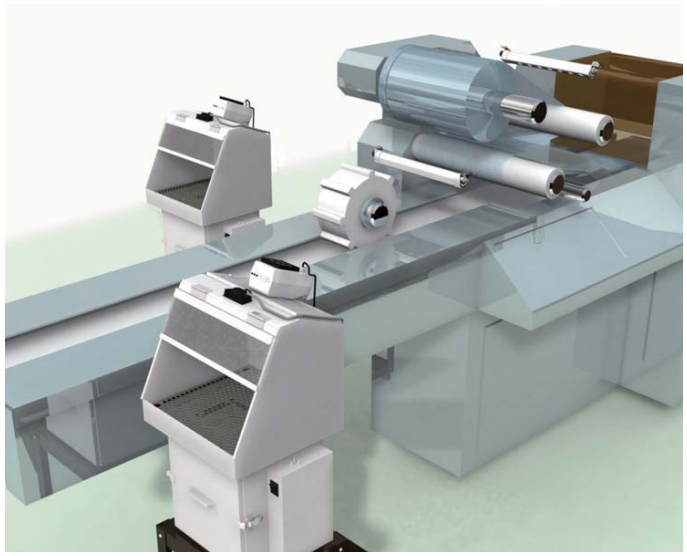
IPC-A4 / A3
Ion Parts Cleaner

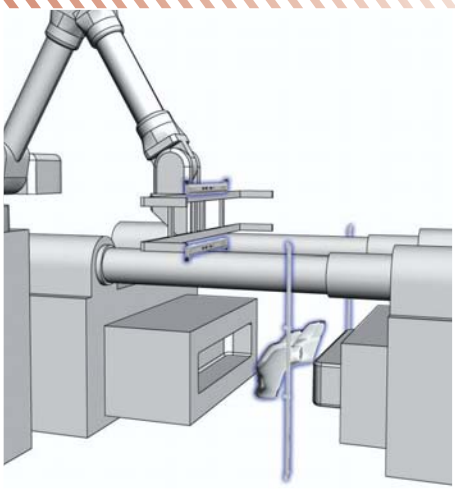
A4/A3 size is ideal for capturing dust with adhesive urethane gel at cell workbench

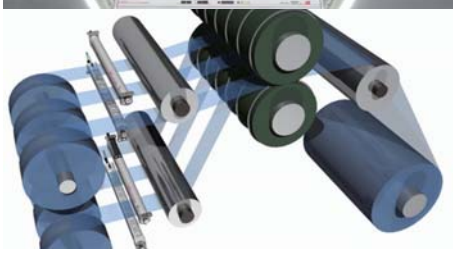
IPC20-E / IPC40-E
Ion Parts Cleaner

Work piece is detected with sensor, and dust eliminating air is sprayed and particles are attracted by a vaccum





AUTOMATIC APPLICATIONS IONIZERS

NOZZLE TYPES AND BARS

FOR STATIC ELECTRICITY ELIMINATION AND DUST REMOVAL

N-1

Super Slim Nozzle-Type Ionizer

Super Compact Slim Body.
A rotating nozzle enables to ionize anywhere

N-2

Pinpoint Nozzle Ionizer

Featuring an LED indicator that communicates the device's operating status

C-bar Series

AC Pulse Ionizing Clean Bar
(Length from 90 to 300 cm)

Clean & Compact.
Newly designed high-precision and high-speed ionizer applying a new technology

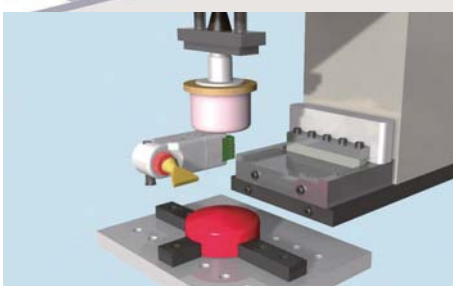
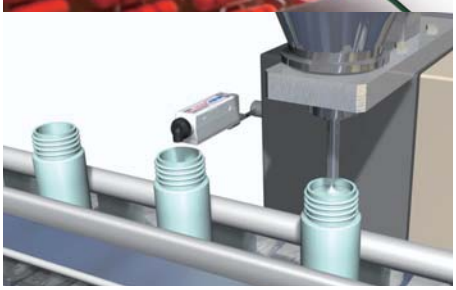
SH-bar Series

Compact AC Pulse Ionizing Bars
(Length from 16 to 70 cm)

Slim & High-speed Neutralization.
Compact bar type ionizer with separate power supply for easy installation





CONDUCTIVE RUBBER MAT

FOR CONTROLLED STATIC ELECTRICITY DISSIPATION

Controlling electroconductivity between $10^6\Omega$ and $10^7\Omega$ without influencing the working environment. Ideal for workbenches requiring static electricity measures

EPA Working Mat・Conductive Rubber Mat

LG-100 / SG-100

ELECTROSTATIC FIELD METER

Visualizing invisible static electricity
Peak hold supports long-time measurements

Electrostatic Field Meter

Eye-02

ESSENTIAL ITEM FOR STATIC ELECTRICITY MEASURES. VISUALIZE THE STATIC CHARGE AND DISCHARGE STATE

VESSEL EUROPE

6, Avenue du 1er Mai, ZAE Les Glaises, 91120 PALAISEAU, FRANCE
TEL. +33 (0)1 69 19 17 42 FAX. +33 (0)1 69 19 42 20
info.vessel-europe@vessel.co.jp www.vessel.co.jp/english/