Ionizing Air Cartridge

6110/6110A

Simco-Ion's self-contained compressed Air Ionizing Cartridge controls static charge in production, packaging, laboratory and other environments where static build-up can cause contamination, ESD, material handling problems or microprocessor lock-up. Compact and rugged, the cartridge can be used either for in-line ionization or as an ionizing blow-off gun.

For in-line use, both models connect to a compressed air source, and it is ready to ionize any production equipment.

Model 6110A (with airflow) may be attached to an ordinary air gun and the airstream is ionized for effective particle removal. An internal sensor initiates ionization only when the gun is triggered, ensuring on-demand control of static charge.

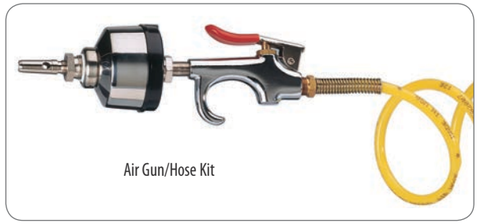
Features

- IsoStat technology
- Internal air flow sensor (Model 6110A)
- Shielded emitter points
- Compact size
- Optional blow-off gun kit

Benefits

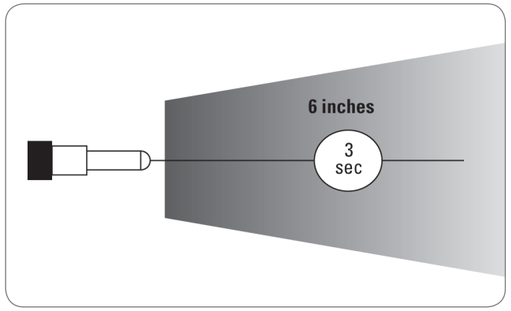
- Intrinsically balanced; no calibration needed
- On-demand ionization during gun operation
- No shock hazard
- Adapts to compressed air lines
- Fits any air gun

Adapter



Air Gun/Hose Kit

Typical Discharge Times (sec)



<4 sec, 1000-100V for either polarity. Measured with 6110(A) air output connector 6" from the plate of a CPM and an inlet air flow rate of at least 2 scfm. 2 scfm is the minimum flow rate for operation of the 6110(A).

IsoStat Technology

Simco-Ion's IsoStat technology guarantees intrinsically balanced ionization and eliminates complicated feedback circuits. Ionizers incorporating this technology never need calibration and require very little maintenance. IsoStat is based on a law of physics, Conservation of Charge, which states that charge cannot be created or destroyed in an isolated system. By isolating the ionizer's emitter points from ground, IsoStat ensures equal numbers of positive and negative ions.

6110/6110A Specifications

Airflow	At least 2 scfm
Air Line	1/4" NPT female (input and output), 1/8" NPT adapter available
Balance	>±25V @ 6" (15.2 cm)
Discharge*	±1,000-100V, <4 sec
Emitter Points	Tungsten alloy, estimated life 5 years of continuous use
Indicators	Green power
Power	Wall transformer 120 VAC (powers up to 10 units), 100 VAC & 230 VAC models available
Sensor	Turns ionizer off when air is not flowing (Model 6110A only), model without sensor also available for continuous flow applications
Technology	Steady-state DC
Voltage	Input: 24 VAC, <1W from transformer
Dimensions	2.2"D x 3.1"L (5.6 x 7.9 cm) not including fittings
Weight	6 oz (170.1g)
Certifications	CE

* Tested in accordance with ANSI/ESD STM3.1-2015.

Accessories

The Model 6110A is supplied with a nozzle and adapter which may be used as an air gun using Simco-Ion air gun/hose kit, part number 91-6150. (The Model 6110 does not operate with this kit.)

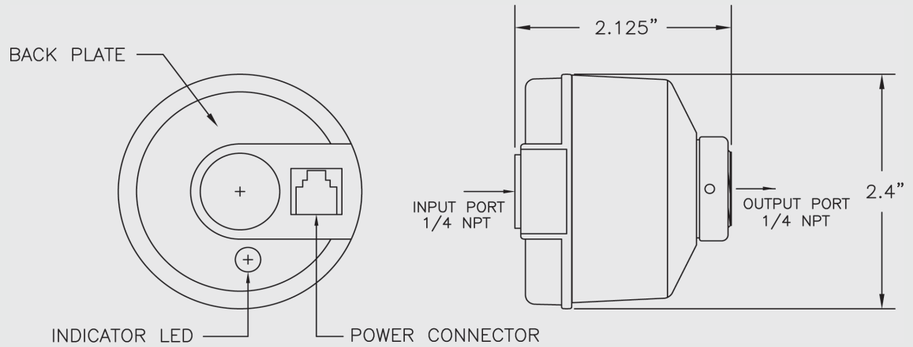
Applications

In-line ionization reduces ESD damage and microprocessor lock-up in:

- IC packaging and marking
- Surface-mount equipment
- Device testing equipment

Ionizing blow-off gun removes particles in:

- Printed circuit board assembly
- Medical device manufacturing
- Film processing



Ionizing Blow-off Gun

AIRFORCE 6115

Simco-Ion AirForce 6115 Ionizing Blow-off Gun was designed with the operator in mind. Its lightweight and flexible air hose moves with the operator and makes work easier. No high voltage cable means improved operator safety. The gun's ergonomic design, with a light touch trigger and easy-view LED, minimizes fatigue and eliminates wrist hyperextension. The compact console can be mounted anywhere, so it doesn't take up valuable workspace but is still easily accessible. To make the work environment more pleasant, the AirForce 6115 also features low audible noise.

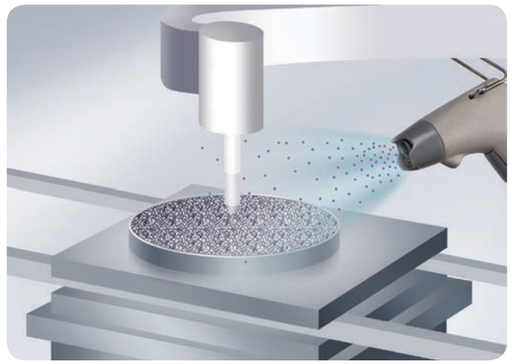
Strong blow-off power makes the AirForce 6115 effective in removing particle contamination and ideal for use in clean process applications. It is the only gun product rated at ISO 14644 Class 4 cleanliness. Steady-state DC ion emission provides efficient ionization with an average discharge time of less than 1.0 second.

Features

- Ergonomic gun design
- Flexible, lightweight air hose with low voltage power cable
- Replaceable emitter point assembly & quick-eject filter
- Strong blow-off force
- Steady-state DC ion emission
- IsoStat technology
- Durable static-dissipative materials
- ISO 14644 Class 4 cleanliness operation

Benefits

- Reduces fatigue and wrist hyperextension
- Moves with operator and does not interfere with work
- Minimizes maintenance downtime
- Effective removal of particle contamination
- Fast discharge times; efficient ion delivery
- Intrinsically balanced; no calibration needed
- Holds up to high impact; ESD-safe
- Suitable for use in cleanroom applications for semiconductor, medical and hard disk drive



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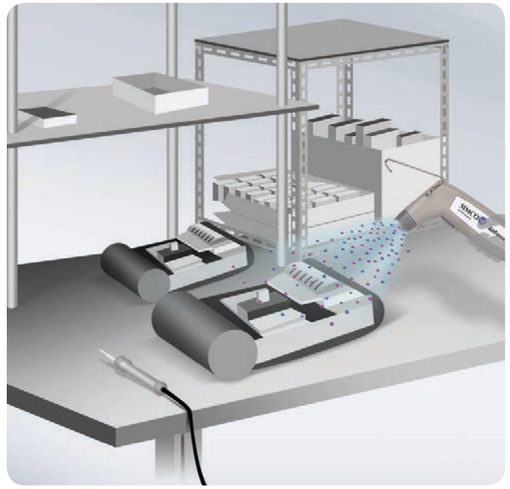


6115 Specifications

Air Hose	Static-dissipative polyurethane, 3/8″ outside diameter, 8 ft (2.4m)/65 psi
Audible Noise	70 dBA @ 1m (30 psi)
Balance	±30V
Blow-off Force	41g @ 30 psi (measured @ 3″ (7.6 cm) from a 2″ (5.1 cm) dia. target)
Cleanliness	Meets ISO 14644 Class 4 (Fed Std. 209E Class 10)
Discharge*	±1000-100V 1.0 sec @ 6″ (15.2 cm), 30 psi
EMI	29 dbµV, average level 100 KHz to 1.1 MHz
Emitter Points	Tungsten emitter points
Filter	99.9% efficient, 0.01 micron or larger air particles (99.9% coalescing efficiency)
Gas	Connection: 1/4″ male industrial interchange quick disconnect Supply: Clean dry air (CDA) or nitrogen (N_2) (20-65 psi)
Indicators	Green on both console and gun
Ozone	<0.005 ppm (typ)
Power	24 VAC, 10W powered from wall transformer
Technology	Steady-state DC
Mounting	Metal mounting plate attaches to back of console
Enclosure	Gun/console: static-dissipative polycarbonate (gun hanger 302 stainless steel)
Dimensions	Gun: 8″L x 3″W x 1″D (20.3L x 7.6W x 2.5D cm) Console: 8.5″L x 3.0″W x 1.6″D (21.6L x 7.6W x 4.1D cm)
Weight	Gun: 12 oz (341g) with 8 ft (2.4m) air hose Console: 11.5 oz (326g)
Certifications	

Optional Foot Pedal

Gooseneck Mounting Stand

IsoStat Technology

Simco-Ion's IsoStat technology is the first balancing technology for ionizers to guarantee intrinsically balanced ionization and elimination of complicated feedback circuits.

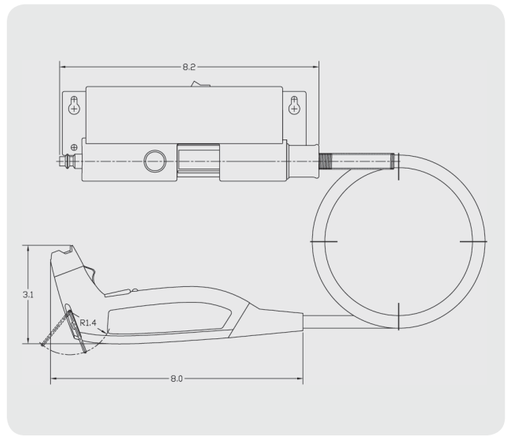
IsoStat is based on a law of physics–Conservation of Charge–which states that charge cannot be created or destroyed in an isolated system. By isolating the ionizer's emitter points from ground, IsoStat ensures equal numbers of positive and negative ions. Characteristics of IsoStat ionizers include:

- Ionizers never need calibration and require very little maintenance
- Small size and operation without grounding wires

High Reliability

IsoStat technology also guarantees that the AirForce is calibration free and requires little maintenance when used with CDA or N_2. When the air filter or emitter points need replacement, they snap in and out in less than a minute—reducing gun down-time and improving long-term performance.

To avoid replacement costs, the AirForce is made from durable polycarbonate that holds up to high impact. The gun body, air hose and control console are static dissipative and ESD-safe. And an extremely low EMI level ensures the AirForce won't interfere with other electronic equipment or operations.



Ionizing Air Gun

TOP GUN™ 3

Simco-Ion's Top Gun Ionizing Air Gun is a high-performance ionizing air gun designed for a wide variety of electronic manufacturing, medical and assembly applications. Balanced to 0±15V, the Top Gun features high blow-off force and low air consumption providing high-efficiency cleaning and maximum static charge decay. A filter at the exit of the gun ensures that the air is clean.

The gun body is lightweight but durable. It features a light-touch trigger, making it comfortable even for extended use. All functionality is built into the gun, including a flow control valve, a balance adjustment for calibration, and a two-level LED which indicates both power and ionization. Both the gun and cable are static dissipative. A hanger is provided for easy mounting.

The orION, converted from Top Gun to work as ionizing air nozzle, also features high blow-off force capability and reliable balance stability maintained at better than ±15V. An easily replaceable 0.01-micron particle filter is positioned at the nozzle air exit to provide the highest confidence that clean air is delivered to sensitive product.

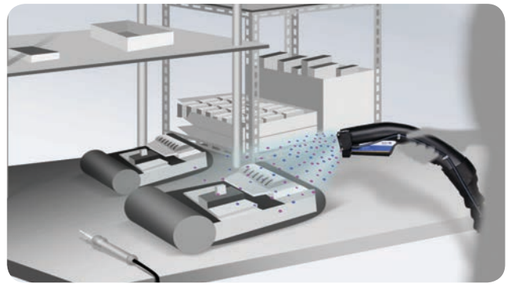
Features

- Lightweight, ergonomic design
- Flow control valve for adjustable airflow
- Electrically balanced ion output
- Integrated, replaceable filter-nozzle
- Ionization indicator light

Benefits

- Maximum user comfort prevents operator fatigue and increases productivity
- Airflow use that meets the specific application requirements
- Protects ESD-sensitive components and assemblies
- Insures air contacting the target area is clean
- Eliminates the guesswork of ionization at target area

Top Gun 3 Balance Long-term Stability (V)				
Distance	0 hr	195 hrs	465 hrs	465 hrs
		@ 2 Bar		
5 cm	-8	5	0	0
10.2 cm	-8	8	1	1
15.2 cm	0	6	5	5
		@ 4 Bar		
5 cm	-2	2	-1	-1
10.2 cm	-5	2	-1	-1
15.2 cm	-1	1	1	1



Top Gun 3 Specifications

Airflow	2.4 scfm @ 30 psi (68/min, 2 bar) 4.6 scfm @ 60 psi (130/min, 4 bar) 7.4 scfm @ 100 psi (210/min, 7 bar)
Air Hose	Static dissipative polyurethane 7' or 14' standard, 5' or 14' with optical sensor (integral to gun and control module)
Air Pressure	Pressure relief in nozzle complies with OSHA requirements
Audible Noise	76 dbA @ 30 psi input (2 bar), 89 dbA @ 60 psi input (4 bar), 97 dbA @ 100 psi input (7 bar) (measured 24" (600 mm) from nozzle)
Balance	±15V
Blow-off Force	180g @ 100 psi, 2" diameter target 3" from the gun
Discharge*	1.3 sec @ 6" (15.2 cm), 30 psi (±1000-100V), 0.5 sec @ 2" (5 cm), 60 psi (±1000-100V)
Filter	0.01 micron rating; replacement filters available
Gas	Connection: 1/4" NPT (female) Supply: Clean dry air (CDA) or nitrogen (N_2) (100 psi max)
Temperature	Operating Env: 32-104°F (0-40°C), 30-60% RH (non-condensing)
Ozone	0.001 ppm measured 18" (450 mm) from gun, operation @ 15 psi (1 bar)
Voltage	Input: 120 VAC, 60 Hz, 0.2A, 230 VAC, 50 Hz, 0.1A
Enclosure	Gun: Static dissipative polycarbonate/ABS blend Cable: static dissipative polyurethane
Dimensions	6.45"H x 5.20"W x 3.35"D (does not incl. flanges) (164 x 132 x 85 mm)
Weight	Gun: 6.5 oz (185g) Air hose: 1.25 ounces/ft (115g/m)
Certification	

* Tested in accordance with ANSI/ESD STM3.1-2015.

Power Unit Specifications

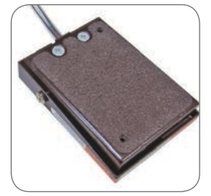
Power	120 VAC, 50/60 Hz, .10A, 230 VAC, 50/60 Hz, .05A
Power Inlet	IEC 320 with 400 mA SLO fuse
Pressure	Clean dry air (CDA) or nitrogen (N_2) (7 bar) 1/4" NPT connector, female (100 psi max)
Dimensions	5.20W " 6.45"H x 3.35"D (132 x 164 x 85 mm)
Enclosure	Powder-coated steel
Weight	6.5 lbs (2.7 kg)

Sidekick and Foot Pedal

The Top Gun with Sidekick offers hands-free operation and flexible positioning during assembly and manufacturing processes. A foot-pedal controls both ionization and airflow, which reduces compressed air costs and extends the life of the ionizer.

- Fully adjustable 18" (46 cm) neck focuses the ionized airflow
- Tabletop bracket provides easy mounting
- Foot-pedal permits hands-free operation

Hands-free Sidekick Option

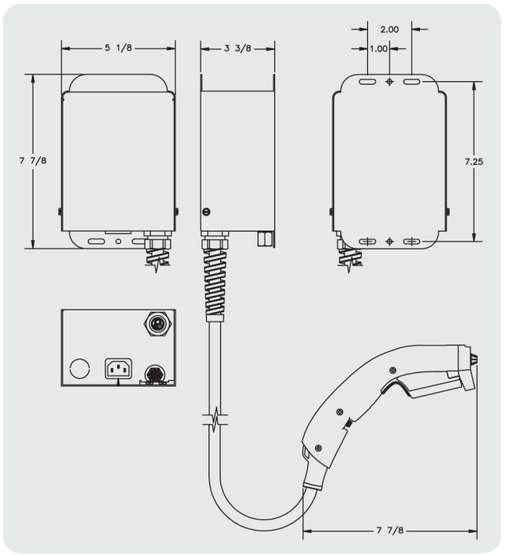


Foot Pedal Option

Optical Sensor

For automated assembly, Top Gun is available with an optional optical sensor, which automatically activates Top Gun when an object is in range. The Optical Sensor has an "adjustable range" from 1-30". Two LED indicators show when the optical sensor is turned on and when the object passing through the sensor area is automatically being ionized

Optical Sensor



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Ionizing Air Nozzle & Controller

orION™

Simco-Ion's orION Ionizing Air Nozzle and Controller provides high performance and reliability in a compact, compressed air nozzle. It has been designed for use in fixed applications on manufacturing lines, equipment, and tool applications in the telecommunications, consumer electronics, semiconductor and medical device manufacturing industries.

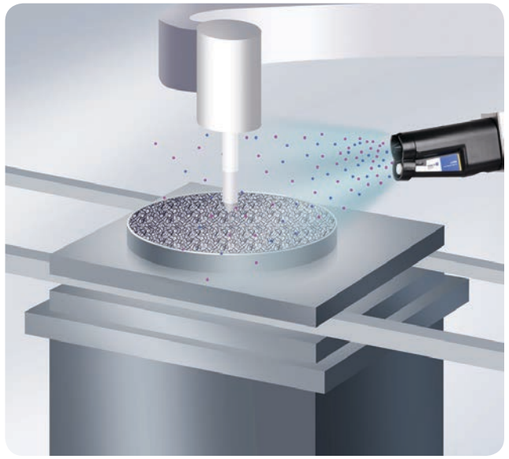
The orION features high blow-off force capability combined with fast removal of electrostatic surface charge. Reliable balance stability is maintained at better than ±15V. An easily replaceable 0.01-micron particle filter is positioned at the nozzle air exit to provide the highest confidence that clean air is delivered to sensitive product.

Features

- Compact nozzle and cable assembly
- Forceful gas-jet nozzle
- Integrated filter within nozzle
- Remote operation of ionization and nozzle gas flow
- Ionization balance adjustments at nozzle and at controller

Benefits

- Reduces fatigue and wrist hyperextension
- Moves with operator and does not interfere with work
- Minimizes maintenance downtime
- Perfect for tight-constrained applications
- Fast, effective charge neutralization and blow-off cleaning
- Contaminate free gas discharge
- Offers control of orION from most convenient operator location
- Convenient balance optimization



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Applications

- Medical device manufacturing and packaging
- Precision parts assembly
- Particulate removal in optics
- Cleaning glass or molded parts prior to finishing
- Cleaning thermo-formed trays

orION Specifications

Air Pressure	Pressure relief in nozzle complies with OSHA requirements
Audible Noise	76 dB @ 30 psi (206 kPa), 89 dB @ 60 psi (412 kPa), 97 dB @ 100 psi (690 kPa) (measured 24″ (600 mm) from nozzle)
Balance	0V ±15V
Discharge*	<1 sec @ 2″ distance, <2 sec @ 6″ distance (input pressure between 10-100 psi)
Connectors	4 position, keyed circular
Filter	0.01 micron rating
Gas	**Consumption**: 2.4 scfm @ 30 psi (206 kPa), 4.6 scfm @ 60 psi (412 kPa), 7.4 scfm @ 100 psi (690 kPa) **Inlet**: 1/4″ NPT (female) **Supply**: 100 psi (690 kPa) max clean dry air (CDA), nitrogen (N_2), CO_2
Ozone	<0.5 ppm measured @ 1′
Power	IEC320 inlet
Temperature	Operating Env. 32-104°F (0-40°C), 30-70% RH (non-condensing)
Voltage	Input: 120 VAC, 60 Hz, 0.2A, 230 VAC, 50 Hz, 0.1A
Weight	**Nozzle**: 6.5 oz (185 g) **Cable**: 1.25 oz/ft (115 g/m) **Controller**: 6.0 lb (2.7 kg)
Dimensions	Controller: 6.45″H x 5.20″W x 3.35″D (does not incl. flanges) (164 x 132 x 85 mm)
Certification	CE

* Tested in accordance with ANSI/ESD STM3.1-2015.

Flexible Neck Stand & Foot Switch

orION with Sidekick offers hands-free operation and flexible positioning during assembly and manufacturing processes. A foot switch controls both ionization and airflow, which reduces compressed air costs and extends the life of the ionizer.

Foot Pedal Option

The flexible gun mount allows the operator to focus the ionized airflow where it is needed. The stand includes a steel bracket for easy bench top mounting.

- Fully adjustable 18" (46 cm) neck focuses the ionized airflow
- Tabletop bracket provides easy mounting
- Foot switch permits hands-free operation

Optical Sensor

For automated assembly, orION offers an optional optical sensor, which automatically activates the orION when an object is in range. The optical sensor has an adjustable sensing range from 1-30" (2.5-76 cm).

Power Unit Assembly

Compressed gas is connected to a power unit with a solenoid to turn gas flow on and off. Gas tubing connects to nozzle that has been carefully designed to yield a forceful blast while keeping the noise level low.