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Super Ion Air Knife

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Digital Flowmeter

26 CATALOG

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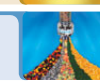

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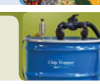

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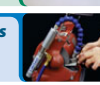

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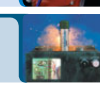

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OSHA and CE Compliance: EXAIR compressed air products comply with OSHA's Safety Requirements, the EU General Product Safety Directive (2001/95/EC) and meet the noise limitation requirements of the EU Machinery Directive (2006/42/EC). EXAIR's Electronic Flow Control and Electronic Temperature Control meet the low voltage standards of the EU Low Voltage Directive (2006/95/EC). They help companies comply with the Noise Directive (2003/10/EC) along with pending changes to the workplace noise requirements due to the implementation of the Physical Agents Directive (2003/10/EC). These directives are non-marking directives and do not allow display of the CE mark. Some EXAIR products display the CE mark where there are applicable directives. All sound level measurements are taken at 3 feet away.

RoHS: Electrical portions of EXAIR's static eliminators, EFC, ETC, solenoid valves, and thermostats comply with the RoHS (Restriction of Hazardous Substances) Directive 2002/95/EC, including the amendment outlined in the European Commission decision L 214/65.

Reach: Per Regulation (EC) No 1907/2006 Title I, Article 3, paragraph 3, the European Union has recently enacted legislation to register chemicals and substances imported into the EU to ensure a high level of protection of human health and the environment.

Per Title II, Article 7, paragraph 1, articles (products) must be registered when a substance is intended to be released under normal or reasonably foreseeable conditions of use and it is present in those articles in quantities totaling over 1 metric ton per producer or importer per year. Registration of EXAIR products is not required since they do not contain substances that are intentionally released.

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An INTELLIGENT COMPRESSED AIR® Product

Intelligent Compressed Air® products are identified throughout this catalog that can help your plant save tens of thousands of dollars over the course of a single year. *The Best Practices for Compressed Air Systems* manual published by the Compressed Air Challenge® recommends products like the Super Air Knife™, Super Air Amplifier™, and the family of Super Air Nozzles™ for energy conservation. Many of the products shown offer unique ways to solve common industrial problems using compressed air. Compressed Air Challenge is a registered trademark of Compressed Air Challenge, Inc.

ENERGY STAR PARTNER

EXAIR has partnered with Energy Star, a voluntary program of the U.S. Department of Energy and the Environmental Protection Agency. Energy Star offers energy efficient solutions to help save money while protecting the environment for future generations. EXAIR has implemented improved energy management practices and technologies throughout our facility, including energy efficient lighting, HVAC systems, and electronic thermostats. EXAIR's participation in this program underscores our commitment to conserving energy.

EXAIR products are subject to ongoing development. Specifications are subject to change without notice.
Some products in this catalog are covered by U.S. Patent #5402938, #8153001 and #8268179 and others may be U.S. Patent Pending.

Static Eliminators

Eliminate static and dust!

Neutralize and clean at distances up to 20 feet!

What Is Static?

Material such as paper, plastic or textiles normally contain an equal number of positive and negative charges – that is, they are electrically balanced. Friction can disturb this balance, causing the material to become electrically charged.

Watch the video!
www.exair.com/sevideo.htm

The electrical charge (static) will exert a force on nearby charged objects or a grounded conductor. 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

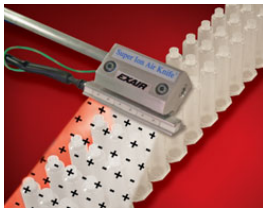
Charged conductors (like metals) discharge completely when grounded. Insulators (like plastics) don't conduct electricity and can't discharge when grounded. Grounded brushes or tinsel often have little effect on these surfaces.

When aiming EXAIR's Model 7905 Static Meter at a single plastic surface, it is common to measure many voltages across the same surface. The higher the voltage measured, the stronger the static charge or force at that point. It is also possible for some voltages to have opposite polarities (positive or negative) which determines if two insulators will attract or repel one another.

EXAIR's static eliminators (called ionizers) can eliminate the charge. These shockless ionizers are electrically powered and produce a bulk of positive and negative ions. The charged surface attracts the appropriate number of positive or negative ions from the ionizer to become neutral (discharge).

Selecting The Right Static Eliminator

EXAIR offers systems for total static control. When static is a problem on moving webs, sheet stock, three dimensional parts, extrusions or packaging, EXAIR has a solution.



A small Model 111113 3" (76mm) Super Ion Air Knife System eliminates contaminants from syringes prior to packaging.

Static Eliminators With Air

Combining our engineered airflow products with ionizers gives us the ability to eliminate the charge quickly and at great distances. Laminar flow airstreams make it possible to blow away any contaminants and the charge that attracts them. They are ideal for:

- Hard to reach places or obstructed surfaces
- Product moving at high speeds
- Surfaces with an extremely high charge

Compressed air consumption and noise are minimized while providing force that can be adjusted from a "blast" to a "breeze". Tests show these ionizers positioned two feet (610mm) away from a charged surface to be as effective as an Ionizing Bar without air delivery positioned one-half inch (13mm) from the surface.

The **Super Ion Air Knife** provides the best performance of all ionizers. It uses our Super Air Knife (40:1 air amplification) to deliver a uniform sheet of ionized air effective up to 20 feet (6.1m) away.

The **Standard Ion Air Knife** uses our Standard Air Knife (30:1 air amplification) to deliver a sheet of ionized air to the surface. Air consumption and noise are somewhat higher than the Super Ion Air Knife.

The **Super Ion Air Wipe** clamps around the part and creates a ring of ionized airflow. It neutralizes and cleans continuous moving surfaces.

The **Ion Air Cannon** uses our Super Air Amplifier (22:1 air amplification) to provide a focused, conical airstream that is capable of removing the charge up to 15 feet (4.6m) away.

The **Ion Air Gun** uses our High Velocity Air Jet (5:1 air amplification) to provide a narrow beam of ionized airflow. This hand-held static eliminator is rugged for industrial use and has incredibly fast static decay rates.

The **Ion Air Jet** uses our High Velocity Air Jet (5:1 air amplification), and is an effective spot cleaner. Available for permanent mount or with flexible Stay Set Hose, this ionizer is the ideal way to focus an ionized airflow at confined areas.

A Model 7006 6" (152mm) Ionizing Bar eliminates the static charge causing packing peanuts to cling.

Static Eliminators Without Air

In some situations, even the smallest amount of airflow can disturb the product. This is especially true for lightweight materials. EXAIR manufactures two styles of ionizers for these critical applications.

Ionizing Bars are ideal for relatively flat materials, where the bar can be mounted within a few inches of the product surface.

The **Ionizing Point** is effective for spot neutralization. The compact size makes it ideal for winding or slitting operations. It can also be mounted through a duct to neutralize static charges due to moving air or materials.

This special ionizer dries water based paint on car bodies and eliminates any static problems.

Special Static Eliminators

EXAIR manufactures static eliminators suited to specific application requirements. This special ionizer *(shown bottom right)* was developed for the automotive industry. This air amplifier and ionizer combination is used to dry water based paints on car bodies while eliminating the possibility of a static charge that might attract dust or other contaminants.

If you have special requirements, please contact an Application Engineer to discuss the application.

Super Ion Air Knife™

Powerful static eliminator prevents jamming, tearing, shocks and dust up to 20' away!

Uses The Super Air Knife

- ☑ **Low Air Consumption!**
- ☑ **Surprisingly Quiet!**
- ☑ **Uniform Airflow!**
- ☑ **End and Bottom Air Inlets!**

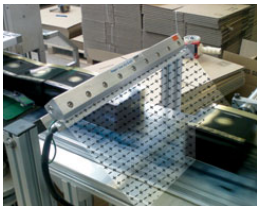
What Is The Super Ion Air Knife?

EXAIR's Super Ion Air Knife removes static electricity from plastics, webs, sheet stock and other product surfaces where tearing, jamming or hazardous shocks are a problem. The laminar sheet of air sweeps surfaces clean of static, particulate, dust and dirt. Production speeds, product quality, and surface cleanliness can improve dramatically.

Why The Super Ion Air Knife?

The Super Ion Air Knife floods an area or surface with static eliminating ions - up to 20 feet (6.1m) away. A uniform airflow across its length will not cause misalignments to critical surfaces such as webs. Force can be adjusted from a "blast" to a "breeze". The Super Ion Air Knife is electrically powered, is shockless and has no moving parts. **It also requires only 3.7 SCFM of compressed air per foot of length at 5 PSIG (105 SLPM per 300mm of length at 0.3 BAR).** Sound level is surprisingly quiet at 50 dBA for most applications.

The Super Ion Air Knife eliminates the static charge on labels being applied to PET soft drink bottles.



The Model 111118 18" (457mm) Super Ion Air Knife System eliminates dust from body care products prior to sealing the boxes in cellophane.

Applications

- Web cleaning
- Molding machinery
- Sheeters and trimmers
- Cleaning parts
- Pre-paint dust removal
- Shrink wrappers
- Package cleaning
- Bag opening/fill operations
- Printing equipment

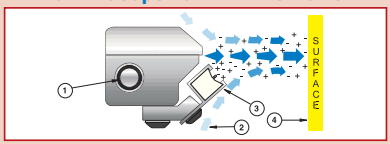
Advantages

- Low air consumption
- Uniform airflow across entire length
- Quiet
- Effective up to 20 feet (6.1m)
- Shockless, non-radioactive
- Compact, rugged, easy to install
- Unlimited system lengths of uninterrupted airflow
- Low maintenance
- Variable force and flow

Bumpers, car bodies and fascia are cleaned of dust and fibers prior to painting.

Super Ion Air Knife

How The Super Ion Air Knife Works



Compressed air flows through an inlet (1) into the plenum chamber of the Super Ion Air Knife. The flow is directed to a precise, slotted orifice. As the primary airflow exits, it creates a uniform sheet of air across the entire length that immediately pulls in surrounding room air (2). An electrically powered ionizing bar (3) fills the curtain of air with positive and negative charges. The airstream delivers these static eliminating ions to the product surface (4) where it is instantly neutralized and cleaned of dust and other particulates.

Added Features

- Compressed air inlets are provided on each end and the bottom of the Super Ion Air Knife. Multiple Super Ion Air Knives can be mounted end-to-end without an air gap.
- Shims can be installed easily if additional hard-hitting velocity is required.
- Primary air does not impact any surface of the Super Ion Air Knife which keeps the sound level low.
- Insertion molded emitter points eliminate potential dirt accumulation that could degrade performance or eventually short the ionizing bar.
- Emitter points are sharp, durable stainless steel.
- The power cable is shielded and has integral grounding. The threaded bayonet connector is fully assembled and ready to use.
- Super Ion Air Knife Kits, which include all components necessary for operation, are available.

Super Ion Air Knife Performance

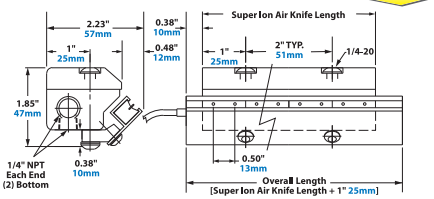
Pressure Supply		Air Consumption*		Sound Level	Dissipates 5kV**
PSIG	BAR	SCFM	SLPM	dBA	SECONDS
5	0.3	3.7	105	39	0.60
10	0.7	5.5	156	51	0.50
20	1.4	13.2	372	57	0.25
40	2.8	20.4	576	61	0.20
60	4.1	27.6	780	65	0.18
80	5.5	34.8	984	69	0.18
100	6.9	42.0	1,188	72	0.18

* per foot (305mm) of length
** 6" (152mm) from target

For airflow pattern, see Super Air Knife page 15.

Super Ion Air Knife Dimensions

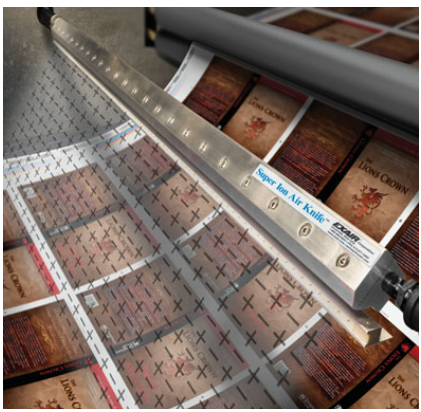
DOWNLOAD drawings at EXAIR.com



Enhanced Performance and Reliability

Ionizing bars are less effective without an air delivery system. When used by itself, a bar must be mounted within two inches of the charged surface to fully neutralize it. This close mounting is impossible when the static is generated in confined areas of a machine. Ion coverage is minimal on oddly configured parts or when high production speeds are involved.

The right type of air delivery is critical. Blowers produce an uneven, turbulent airstream that can cause the positive and negative ions to recombine before hitting the charged material. They are large, suffer mechanical wear and provide limited airflow control. (For more information on blowers, see page 13.) The compact Super Ion Air Knife uses a small amount of compressed air to produce a balanced, laminar sheet of air to carry the ions to the charged surface, even when it is far away. Flow and force are easily controlled and there are no moving parts to wear out.



The 48" (1219mm) Super Ion Air Knife neutralizes the static electricity and cleans the surface of the paper.

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Super Ion Air Knife Specifications

The Super Ion Air Knife is available in standard lengths of 3", 6", 9", 12", 18", 24", 30", 36", 42", 48", 54", 60", 72", 84", and 96" (76, 152, 229, 305, 457, 610, 762, 914, 1067, 1219, 1372, 1524, 1829, 2134, and 2438mm). **Special lengths and unlimited system lengths are available *(please contact our factory).***

A 5' (1.52m) shielded power cable with ground and assembled bayonet connector are included.

EXAIR Model 7901, 7907, 7940 or 7941 Power Supply (5kV) is required for bar operation. Power supplies are equipped with a 6' (1.83m) power cord, lighted power switch and (2) or (4) high voltage outlets.

Certifications: Ionizing Bars are UL Component Recognized to U.S. and Canadian safety standards. Power supplies are UL Listed to U.S. and Canadian safety standards, and are CE and RoHS compliant.

Compressed Air: 1/4 NPT inlets are provided on each end and the bottom.

Electrical: For use with 5 kVrms, 5 milliamperes (max.) power supply.

Electrical Hazard: Ionizing bars are shockless (less than 40 microamperes short circuited). **Do not use near flammable materials or gases.**

Materials of Construction:
Super Air Knife: Aluminum
Ionizing Bar Channel: Aluminum
Plastic Parts: UL rated 94 HB
Emitters: Stainless Steel

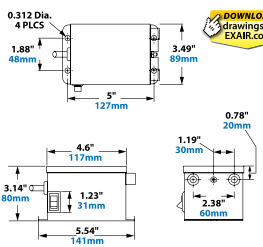
Maximum Ambient Temperature: 165°F (74°C)

Shims: Thicker shims can be installed easily if additional hard-hitting velocity is required. For more information, see "shim sets" on page 15.

Model 9060 Universal Air Knife Mounting System provides secure, precise positioning for the Super Ion Air Knife.
See page 20 for details.

Power Supplies

The Model 7901 and 7907 Power Supply has a lighted power switch and (2) 5kV outlets.



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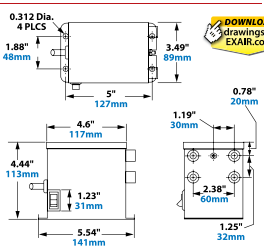
The Two and Four Outlet Power Supplies require an input of 115 VAC, 50/60 Hz. Two other variations for 230 VAC are also available. A 6' power cord and lighted power switch are included. Power Supplies are UL Listed to U.S. and Canadian safety standards, and are CE and RoHS compliant.

The Model 7940 and 7941 Power Supply has a lighted power switch and (4) 5kV outlets.



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Power Supplies

Model #	Description
7901	2 Outlet Power Supply (115V, 50/60Hz)
7907	2 Outlet Power Supply (230V, 50/60Hz)
7940	4 Outlet Power Supply (115V, 50/60Hz)
7941	4 Outlet Power Supply (230V, 50/60Hz)

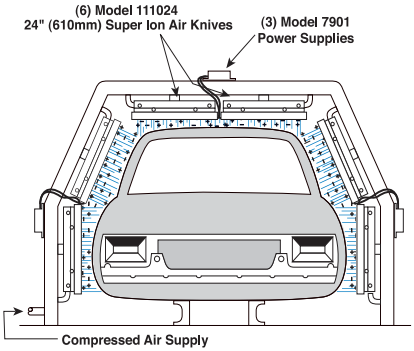
Super Ion Air Knife

Dust Removal From Car Bodies

The Problem: Car bodies are primer coated, then sanded before entering the paint booth. Priming dust, attracted to the car body by a static charge, creates imperfections that are captured and magnified in the painting process.

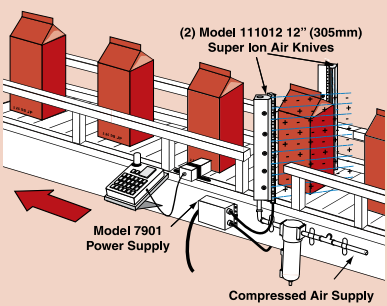
The Solution: An "archway" of **Model 111024 24" (610mm) Super Ion Air Knives was installed upstream of the paint booth.** As the car bodies pass through, **a high velocity sheet of ionized air neutralizes the static charge to release the dust and blow it toward a collection system.**

Comment: Non-turbulent airflow was the reason this cleaning system worked so well. The compact, Super Ion Air Knife has the ability to move the bulk of the static eliminating ions to the car surface. It can be adjusted from a gentle breeze of air to a pounding blast, with instant "on/off" capability. Uniform airflow across the entire length assures that all car body surfaces are neutralized and dust free. Best of all, the Super Ion Air Knife is easy on the compressed air system and workers' ears. They use much less compressed air than standard blowoffs and are around 69 dBA in most applications.



EXAIR's EFC *(shown on page 4)* is an electronic flow control for compressed air. It can sense when there is no car present and will automatically turn off the compressed air until the next car is moved into position. It is a perfect addition to this type of application.

Eliminating Poor Print Quality



The Problem: A beverage manufacturer had problems with ink jet print quality on certain drink containers. Static electricity on the surface attracted the ink to other positions on the container, rather than straight across from the printhead. Printing was illegible. At times, the static charge was so high that it would interfere with the electronics of the inkjet printer, producing odd characters on the display and sometimes shutting it down completely.

The Solution: A Model 111012 12" (305mm) Super Ion Air Knife was installed on each side of the container. The airstream, filled with static eliminating ions, surrounded the container and removed the static charge from the surface. **Print quality was crisp and clear.**

Comment: In an earlier attempt to eliminate the static problem, ionizing bars **without** air delivery proved ineffective, as the ionized air could not reach the surface of the three dimensional containers. The Super Ion Air Knife with its uniform laminar airflow, is capable of neutralizing the charge on any surface it touches. The compressed air required was low since 5 PSIG moved the ions across the container surface. In addition to ink jet, screen, web and offset printing, it is ideal for cleaning parts, removing dust and eliminating potential shock hazards.

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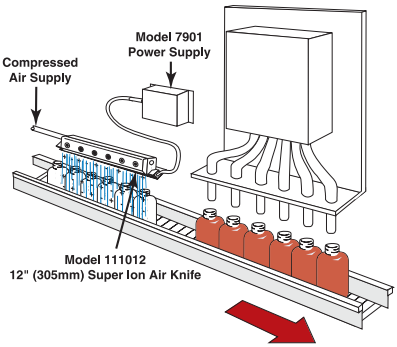
Neutralizing Static On A Fill Line



The Problem: A pharmaceutical company fills mouthwash bottles at a rate of 200 per minute. Friction with the conveyor belt and guide rails produced a static charge on the bottle surface that resulted in two problems. First, the static electricity sent false signals to an encoder responsible for monitoring material flow, causing it to shut the line down periodically. Second, the surface charge was so high that the liquid from the machine's fill spout would divert sideways down the side of the bottle instead of flowing straight down into the mouth.

The Solution: A Model 111012 12" (305mm) Super Ion Air Knife and Model 7901 Power Supply were installed at the entrance to the fill table. The rapidly moving bottles passed under the sheet of ionized air and the surface static was completely neutralized. **The problem was eliminated and the mouthwash went into the bottle where it belonged.**

Comment: Static electricity can bring production to a screeching halt as it did here! The speed of the filling operation required fast static decay over a large surface area - a situation a static bar alone could not remedy. The laminar airflow of the Super Ion Air Knife delivers a flood of static eliminating ions to any surface the airstream touches, making it ideal for oddly shaped parts like bottles, totes or trays as well as flat surfaces like webs, sheet stock or conveyors.

Super Ion Air Knife Models

Super Ion Air Knife - includes the Super Air Knife and Ionizing Bar assembly.

Super Ion Air Knife Systems - include a Super Ion Air Knife and Model 7901 Power Supply (115V, 50/60 Hz).

Super Ion Air Knife Kits - include a Super Ion Air Knife, Model 7901 Power Supply, shim set, filter separator and pressure regulator (with coupler).

Deluxe Super Ion Air Knife Kits - include a Super Ion Air Knife, Model 7901 Power Supply, EFC, Universal Mounting System, shim set, filter separator and pressure regulator (with coupler).

Length	Super Ion Air Knife Model	Super Ion Air Knife Systems Model	Super Ion Air Knife Kits Model	Deluxe Super Ion Air Knife Kits Model
3" (76mm)	111003	111103	111203	111203DX
6" (152mm)	111006	111106	111206	111206DX
9" (229mm)	111009	111109	111209	111209DX
12" (305mm)	111012	111112	111212	111212DX
18" (457mm)	111018	111118	111218	111218DX
24" (610mm)	111024	111124	111224	111224DX
30" (762mm)	111030	111130	111230	111230DX
36" (914mm)	111036	111136	111236	111236DX
42" (1067mm)	111042	111142	111242	111242DX
48" (1219mm)	111048	111148	111248	111248DX
54" (1372mm)	111054	111154	111254	111254DX

Kits include the Super Ion Air Knife, shim set, Model 7901 Power Supply, filter separator and pressure regulator (with coupler).

Super Ion Air Knife

Long Super Ion Air Knives

EXAIR offers Long Super Ion Air Knives in 60" (1524mm), 72" (1829mm), 84" (2134mm) and 96" (2438mm) lengths that are shipped fully assembled. All components have been properly sized to obtain the best performance from the Super Ion Air Knife.

Super Ion Air Knife Models

Long Super Ion Air Knife - includes Super Air Knives with coupling bracket kit and Ionizing Bar installed.

Long Super Ion Air Knife Systems - includes Super Air Knives with coupling bracket kit and Ionizing Bar installed. Includes Model 7901 Power Supply (115V, 50/60Hz).

Long Super Ion Air Knife Kits - includes Super Air Knives with coupling bracket kit and Ionizing Bar installed. Includes Model 7901 Power Supply (115V, 50/60Hz), shim sets, filter separator, and pressure regulator (with coupler).

Length	Long Super Ion Air Knife Model	Long Super Ion Air Knife Systems Model	Long Super Ion Air Knife Kits Model
60" (1524mm)	111060	111160	111260
72" (1829mm)	111072	111172	111272
84" (2134mm)	111084	111184	111284
96" (2438mm)	111096	111196	111296

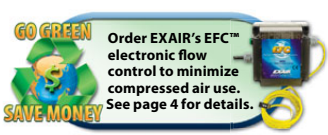
Super Ion Air Knife Models with Plumbing Kit

Long Super Ion Air Knife with Plumbing Kit - includes Super Air Knives with coupling bracket kit, plumbing kit, and Ionizing Bar installed.

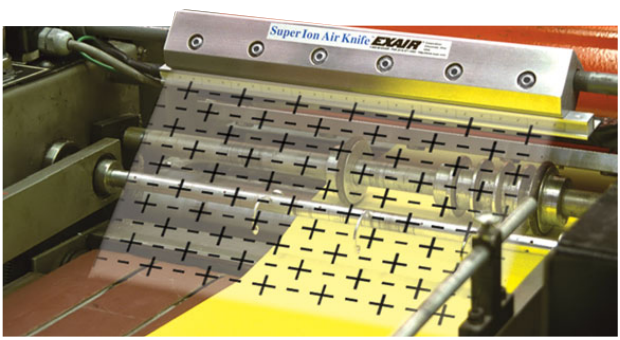
Long Super Ion Air Knife Systems with Plumbing Kit - includes Super Air Knives with coupling bracket kit, plumbing kit, and Ionizing Bar installed. Includes Model 7901 Power Supply (115V, 50/60Hz).

Long Super Ion Air Knife Kits with Plumbing Kit - includes Super Air Knives with coupling bracket kit, plumbing kit, and Ionizing Bar installed. Includes Model 7901 Power Supply (115V, 50/60Hz), shim sets, filter separator, and pressure regulator (with coupler).

Length	Long Super Ion Air Knife Model	Long Super Ion Air Knife Systems Model	Long Super Ion Air Knife Kits Model
60" (1524mm)	111060PKI	111160PKI	111260PKI
72" (1829mm)	111072PKI	111172PKI	111272PKI
84" (2134mm)	111084PKI	111184PKI	111284PKI
96" (2438mm)	111096PKI	111196PKI	111296PKI



Special length Super Ion Air Knives and unlimited system lengths are available. Please contact our factory.



The Super Ion Air Knife eliminates static on a sheeter, so it picks up one sheet at a time.

Accessories and Components

Model #	Description
7003	3" (76mm) Ionizing Bar Only
7006	6" (152mm) Ionizing Bar Only
7009	9" (229mm) Ionizing Bar Only
7012	12" (305mm) Ionizing Bar Only
7018	18" (457mm) Ionizing Bar Only
7024	24" (610mm) Ionizing Bar Only
7030	30" (762mm) Ionizing Bar Only
7036	36" (914mm) Ionizing Bar Only
7042	42" (1067mm) Ionizing Bar Only
7048	48" (1219mm) Ionizing Bar Only
7054	54" (1372mm) Ionizing Bar Only
7060	60" (1524mm) Ionizing Bar Only
7072	72" (1829mm) Ionizing Bar Only
7084	84" (2134mm) Ionizing Bar Only
7096	96" (2438mm) Ionizing Bar Only
7901	2 Outlet Power Supply (115V, 50/60Hz)
7907	2 Outlet Power Supply (230V, 50/60Hz)
7940	4 Outlet Power Supply (115V, 50/60Hz)
7941	4 Outlet Power Supply (230V, 50/60Hz)
7902	Extension Cable, 5' (1.52m) length
7905	Static Meter
9001	Auto Drain Filter Separator, 3/8 NPT, 65 SCFM (1,841 SLPM)
9032	Auto Drain Filter Separator, 1/2 NPT, 90 SCFM (2,548 SLPM)
9002	Auto Drain Filter Separator, 3/4 NPT, 220 SCFM (6,230 SLPM)
9066	Auto Drain Filter Separator, 1-1/4 NPT, 400 SCFM (11,327 SLPM)
9005	Oil Removal Filter, 3/8 NPT, 15-37 SCFM (425-1,048 SLPM)
9006	Oil Removal Filter, 3/4 NPT, 50-150 SCFM (1,415-4,248 SLPM)
9008	Pressure Regulator with Gauge, 1/4 NPT, 50 SCFM (1,415 SLPM)
9033	Pressure Regulator with Gauge, 1/2 NPT, 100 SCFM (2,832 SLPM)
9009	Pressure Regulator with Gauge, 3/4 NPT, 220 SCFM (6,230 SLPM)
9067	Pressure Regulator with Gauge, 1-1/4 NPT, 600 SCFM (16,990 SLPM)
9020	Solenoid Valve, 120V, 50/60Hz, 1/4 NPT, 40 SCFM (1,133 SLPM)
9034	Solenoid Valve, 120V, 50/60Hz, 1/2 NPT, 100 SCFM (2,832 SLPM)
9035	Solenoid Valve, 240V, 50/60Hz, 1/2 NPT, 100 SCFM (2,832 SLPM)
9036	Solenoid Valve, 120V, 50/60Hz, 3/4 NPT, 200 SCFM (5,664 SLPM)
9037	Solenoid Valve, 240V, 50/60Hz, 3/4 NPT, 200 SCFM (5,664 SLPM)
9065	Solenoid Valve, 24VDC, 50/60Hz, 1 NPT, 350 SCFM (9,911 SLPM)

For Technical Assistance, Call An EXAIR Application Engineer 1-800-903-9247
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Standard Ion Air Knife™

A sheet of ionized air is an effective way to eliminate static and clean parts or materials!

What Is The Standard Ion Air Knife?

EXAIR's Standard Ion Air Knife is an effective way to eliminate static. Like its "super" counterpart, the Standard Ion Air Knife removes static electricity from plastics, webs, sheet stock and other surfaces where tearing, jamming or hazardous shocks are a problem.

This ionizer uses our original Standard Air Knife to carry ions from an ionizing bar to the charged surface - up to 20 feet (6.1m) away. Though not as efficient as our Super Ion Air Knife (40:1 air amplification), the Standard Ion Air Knife (30:1 air amplification) still provides fast static decay and strong blowoff force for cleaning. Force can be adjusted from a "blast" to a "breeze". The Standard Ion Air Knife is electrically powered, is shockless and has no moving parts.

Why The Standard Ion Air Knife?

When air consumption and noise level are not critical to the application, the lower cost makes the Standard Ion Air Knife a good choice. (To compare the Super Ion Air Knife and Standard Ion Air Knife, see the performance tables on pages 80 and 86.)

Compressed air inlets are provided on each end of the Standard Ion Air Knife. For long spans, multiple Standard Ion Air Knives can be mounted end-to-end. This produces an air gap at the connection end of about 2" (51mm). (If no air gap is desired, use the Super Ion Air Knife.) Special length Ionizing Bars up to 119" (3.02m) are available for multiple air knife applications.

Applications

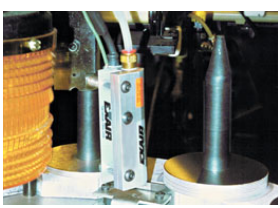
- Web cleaning
- Molding machinery
- Sheeters and trimmers
- Cleaning parts
- Pre-paint dust removal
- Shrink wrappers
- Package cleaning
- Bag opening/fill operations
- Printing equipment

Advantages

- Reduced air consumption
- 30:1 air amplification
- Low noise level
- Effective up to 20 feet (6.1m)
- Shockless, non-radioactive
- Compact, rugged, easy to install
- Unlimited system lengths
- Low maintenance
- Variable force and flow

The Model 7218 18" (457mm) Standard Ion Air Knife System showers parts with static eliminating ions to prevent personnel shocks.

A Model 7212 12" (305mm) Standard Ion Air Knife System cleans metal frames prior to powder coating.



A Model 7103 3" (76mm) Standard Ion Air Knife removes dust from computer hard disks prior to assembly.

Standard Ion Air Knife

Standard Ion Air Knife Performance

Pressure Supply		Air Consumption*		Sound Level	Dissipates 5kV**
PSIG	BAR	SCFM	SLPM	dBA	SECONDS
5	0.3	6	170	66	0.55
10	0.7	8	227	68	0.40
20	1.4	16	453	69	0.25
40	2.8	24	679	78	0.20
60	4.1	32	906	84	0.18
80	5.5	41	1,160	87	0.18
100	6.9	49	1,387	90	0.18

*** per foot (305mm) of length ** 6" (152mm) from target.**
For airflow pattern, see Standard Air Knife page 26.
Note: *Performance on lengths over 36" will vary.*
Contact an Application Engineer for details.

Kits include the Standard Ion Air Knife, shim set, Model 7901 Power Supply, filter separator and pressure regulator (with coupler).

Standard Ion Air Knife Specifications

The Standard Ion Air Knife is available in standard lengths of 3", 6", 9", 12", 18", 24", 30", 36", 42" and 48" (76, 152, 229, 305, 457, 610, 762, 914, 1067 and 1219mm). **Special lengths up to 48" (1219mm) and unlimited system lengths are available *(please contact our factory).***
A 5' (1.52m) shielded power cable with ground and assembled bayonet connector are included.
EXAIR Model 7901, 7907, 7940 or 7941 Power Supply (5kV) is required for bar operation. See page 81 for details.
Certifications: Ionizing Bars are UL Component Recognized to U.S. and Canadian safety standards. Power supplies are UL Listed to U.S. and Canadian safety standards, and are CE and RoHS compliant.
Compressed Air: 1/4 NPT inlets are provided on each end.
Electrical: For use with 5 kVrms, 5 milliamperes (max.) power supply.
Electrical Hazard: Ionizing Bars are shockless (less than 40 microamperes short circuited).
Do not use near flammable materials or gases.

Materials of Construction:
Standard Air Knife: Aluminum
Ionizing Bar Channel: Aluminum
Plastic Parts: UL rated 94 HB **Emitters:** Stainless Steel
Maximum Ambient Temperature: 165°F (74°C)
Shims: Thicker shims can be installed easily if additional hard-hitting velocity is required, see "shim sets" page 25.

Standard Ion Air Knife Models

Standard Ion Air Knife - consists of the Standard Air Knife and Ionizing Bar assembly. Does not include Power Supply.

Standard Ion Air Knife Systems - include a Standard Ion Air Knife and Model 7901 Power Supply (115V, 50/60Hz).

Standard Ion Air Knife Kits - include a Standard Ion Air Knife, Model 7901 Power Supply, shim set, filter separator and pressure regulator (with coupler).

Deluxe Standard Ion Air Knife Kits - include a Standard Ion Air Knife, EFC, Universal Mounting System, Model 7901 Power Supply, shim set, filter separator and pressure regulator (with coupler).

Length	Standard Ion Air Knife Model	Standard Ion Air Knife Systems Model	Standard Ion Air Knife Kits Model	Deluxe Standard Ion Air Knife Kits Model
3" (76mm)	7103	7203	7403	7403DX
6" (152mm)	7106	7206	7406	7406DX
9" (229mm)	7109	7209	7409	7409DX
12" (305mm)	7112	7212	7412	7412DX
18" (457mm)	7118	7218	7418	7418DX
24" (610mm)	7124	7224	7424	7424DX
30" (762mm)	7130	7230	7430	7430DX
36" (914mm)	7136	7236	7436	7436DX
42" (1067mm)	7142	7242	7442	7442DX
48" (1219mm)	7148	7248	7448	7448DX

Special length Standard Ion Air Knives and unlimited system lengths are available. Please contact our factory. See Accessories and Components on page 84.

Ionizing Bars

Low cost Ionizing Bars eliminate static cling!

Compact, rugged design for industrial applications!

What Is The Ionizing Bar?

EXAIR's Ionizing Bar eliminates static electricity on paper, film and plastics that can attract dust and foreign materials, ruin product appearance, produce tearing or jamming, and zap personnel. The electrically powered Ionizing Bar is compact, allowing it to fit in the confined spaces of machinery, where the charge is generated. A high concentration of positive and negative ions produce fast static decay, neutralizing any surface within 2" (51mm) of the bar.

Why The Ionizing Bar?

The unique design of the shockless Ionizing Bar offers improved performance and reliability in industrial applications. Life expectancy has been extended by insertion molding the stainless steel ion emitters into a durable plastic. There are no openings or grooves to accumulate dirt that could cause shorting or arcing. A 5kV power source provides high performance, eliminating frequent burnouts commonly associated with traditional 7kV bars.

The Ionizing Bar includes a five foot shielded cable with ground. A mounting flange is provided for easy installation and all components are fully assembled. Standard lengths up to 96" (2438mm) are available from stock and special lengths up to 119" (3.02m) are available by special order. EXAIR Model 7901, 7907, 7940 or 7941 Power Supply (5kV) is required for bar operation.

The ability to eliminate static can be greatly improved when attaching the Super Air Knife to the Ionizing Bar (*see Super Ion Air Knife, page 79*). The Super Ion Air Knife propels the static neutralizing ions over a larger area which is ideal for high speed, high charge applications. Air delivery can also remove dust and clean the product surface.

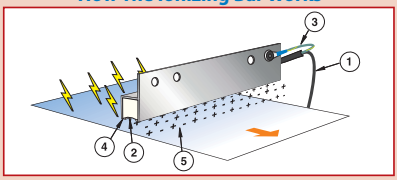
Applications

- Labeling
- Bag making - form and fill
- Neutralizing shrink wrap
- Sheet fed and web presses
- Packaging
- Converting machinery
- Neutralizing slitting operations
- Textiles
- Screen printing

Advantages

- Low cost
- Rapid static decay
- Compact
- Effective up to 2" (51mm)
- Shockless, non-radioactive
- Rugged design for industrial environments
- Easy to install, equipped with mounting flange
- Low maintenance
- Fully assembled

How The Ionizing Bar Works



The shielded power cable (1) carries the 5kVrms power supply output to each capacitively coupled stainless steel emitter point (2) of the Ionizing Bar. A ground wire (3) attached to the bar creates a discharge path from the emitter points to the bar channel (4). The discharge at each emitter charges the molecules of the gases of the surrounding room air, resulting in a shower of ions that are positively and negatively charged (5). If the material surface has a negative charge, it will attract the positive ions from the ionizing bar and become balanced or neutralized. If the material surface has a positive charge, it will attract the negative ions from the ionizing bar to become balanced or neutralized. The voltage potential at each emitter is high enough to ionize the surrounding air without generating a shock when any of the emitters are touched.

Ionizing Bar Specifications

EXAIR Model 7901, 7907, 7940 or 7941 Power Supply (5kV) is required for bar operation. See page 81 for details.

Certifications: Ionizing Bars are UL Component Recognized to U.S. and Canadian safety standards.

Power supplies are UL Listed to U.S. and Canadian safety standards, and are CE and RoHS compliant.

Electrical: For use with 5 kVrms, 5 milliamperes (max.) power supply.

Electrical Hazard: Ionizing Bars are shockless (less than 40 microamperes short circuited). **Do not use near flammable materials or gases.**

Materials of Construction:

Ionizing Bar Channel: Aluminum
Plastic Parts: UL rated 94 HB
Emitters: Stainless Steel

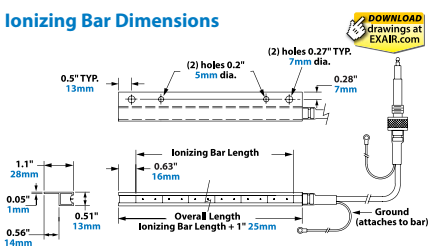
Maximum Ambient Temperature: 165°F (74°C)

Ionizing Bar Performance

	Distance From Charged Surface		
	0.50" (13mm)	1" (25mm)	2" (51mm)
Dissipates 5kV* (seconds)	0.12	0.18	0.30

*** Model 7006 6" (152mm) Ionizing Bar tested**

Ionizing Bar Dimensions



Ionizing Bars

Ionizing Bars - includes a 5' (1.52m) length of shielded cable and assembled connector. For other cable lengths, please contact the factory.

Length	Ionizing Bar Models
3" (76mm)	7003
6" (152mm)	7006
9" (229mm)	7009
12" (305mm)	7012
18" (457mm)	7018
24" (610mm)	7024
30" (762mm)	7030
36" (914mm)	7036
42" (1067mm)	7042
48" (1219mm)	7048
54" (1372mm)	7054
60" (1524mm)	7060
72" (1829mm)	7072
84" (2134mm)	7084
96" (2438mm)	7096

Accessories and Components

Model #	Description
7901	2 Outlet Power Supply (115V, 50/60Hz)
7907	2 Outlet Power Supply (230V, 50/60Hz)
7940	4 Outlet Power Supply (115V, 50/60Hz)
7941	4 Outlet Power Supply (230V, 50/60Hz)
7902	Extension Cable, 5' (1.52m) length
7905	Static Meter

Model 7006 6" (152mm) Ionizing Bar and Model 7901 Power Supply.

Special length Ionizing Bars up to 119" (3.02m) are available. Please contact our factory.

For Technical Assistance, Call An EXAIR Application Engineer 1-800-903-9247
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Super Ion Air Wipe™

Ring of ionized airflow clamps around the part!

Neutralizes and cleans continuous moving surfaces!

What Is The Super Ion Air Wipe?

EXAIR's Super Ion Air Wipe provides a uniform 360° ionized airstream that is easy to clamp around a part for eliminating static electricity and contaminants. It is ideal for use on pipe, cable, extruded shapes, hose, wire and more. It maximizes ionized airflow while minimizing compressed air consumption.

Why The Super Ion Air Wipe?

The Super Ion Air Wipe provides total coverage of the part moving through it. The high volume, high velocity flow attaches itself to the surface and wipes it down with the static eliminating ions. The airflow stays attached to the surface and is effective for many feet away from where the Super Ion Air Wipe is mounted. An optional pressure regulator provides infinite control of the air volume and velocity. Increasing the pressure increases the forceful wiping action. Lower pressures provide excellent coverage with much lower force and velocity.

To this point, there has been no easy way to provide uniform coverage around a continuously moving part. It would have been too difficult to line up and feed continuously moving materials (such as wire, tubing or extrusions) through a solid ring. Arranging a series of ionizers around the surface would provide uneven airflow and prove to be costly. The split design of the Super Ion Air Wipe solves that problem by making it easy to clamp around the surface of the material moving through it, eliminating the need for threading or several ionizers.

The Super Ion Air Wipe is lightweight and easy to mount using the tapped holes on the back. It can also be held in place with rigid pipe. Coupling brackets that hold each half of the Super Ion Air Wipe together are provided which can be installed or removed quickly if required.

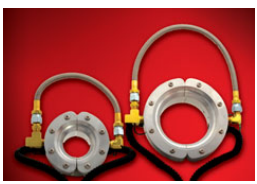
The split design unlatches easily to fit around the moving part - no threading required.

Applications

- Clean and neutralize extrusions
- Neutralizing pipe, tubing, wire
- Cleaning molded parts
- Neutralizing static for quality printing
- Pre-paint dust removal
- Remove chips, shavings and sawdust
- Container neutralization

Advantages

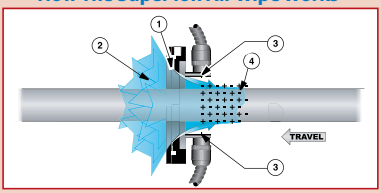
- Low air consumption
- Rapid static decay
- Quiet
- Non-contact
- Effective up to 15 feet (4.6m)
- Shockless, non-radioactive
- Compact, rugged, easy to install
- No moving parts - low maintenance
- Variable force and flow



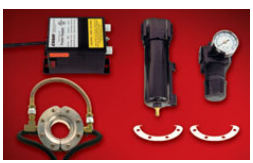
The Super Ion Air Wipe is available in a 2" (51mm) and 4" (102mm) diameter.

Super Ion Air Wipe

How The Super Ion Air Wipe Works



The Super Ion Air Wipe incorporates a Super Air Wipe and a split ionizing collar, energized by a power supply. Compressed air is ejected through the small ring nozzle of the Super Air Wipe at high velocity (1). A conical 360° ring of air is created that induces high volumes of surrounding air (2). The airflow passes through the collar and is ionized by two emitter points (3). That high velocity, ionized airstream attaches itself to the surface of the material running through the Super Ion Air Wipe (4), uniformly eliminating the static electricity and removing any contaminants from the surface.



Model 7462 Super Ion Air Wipe Kit includes the Super Ion Air Wipe, shim set, Model 7901 Power Supply, filter separator and pressure regulator (with coupler).

Super Ion Air Wipe

Model #	Description
7162	2" (51mm) Super Ion Air Wipe
7164	4" (102mm) Super Ion Air Wipe
7262	2" (51mm) Super Ion Air Wipe and Power Supply
7264	4" (102mm) Super Ion Air Wipe and Power Supply

Super Ion Air Wipe Kits

Kits include a Super Ion Air Wipe, shim set, Model 7901 Power Supply, filter separator and pressure regulator (with coupler).

Model #	Description
7462	2" (51mm) Super Ion Air Wipe Kit
7464	4" (102mm) Super Ion Air Wipe Kit

Accessories and Components

7901	2 Outlet Power Supply (115V, 50/60Hz)
7907	2 Outlet Power Supply (230V, 50/60Hz)
7940	4 Outlet Power Supply (115V, 50/60Hz)
7941	4 Outlet Power Supply (230V, 50/60Hz)
7902	Extension Cable, shielded, 5' (1.52m) length (1 male and 1 female fitting)
9001	Auto Drain Filter Separator, 3/8 NPT, 65 SCFM (1,841 SLPM)
9008	Pressure Regulator with Gauge, 1/4 NPT, 50 SCFM (1,415 SLPM)
7905	Static Meter

Super Ion Air Wipe Specifications

EXAIR Model 7901, 7907, 7940 or 7941 Power Supply (5kV) is required for operation. See page 81 for details.

Certifications: Power supplies are UL Listed to U.S. and Canadian safety standards, and are CE and RoHS compliant.

Electrical: For use with 5 kVrms, 5 milliamperes (max.) power supply.

Electrical Hazard: Shockless (less than 40 microamperes short circuited).

Do not use near flammable materials or gases.

Materials of Construction:
Super Air Wipe: Aluminum
Ionizing Collar: Aluminum
Plastic Parts: UL rated 94 HB
Emitter: Stainless Steel

Maximum Ambient Temperature: 165°F (74°C)

Shims: Thicker shims can be installed easily if additional hard-hitting velocity is required. See "shim sets" page 31.

Compressed Air: 1/4 NPT inlet provided.

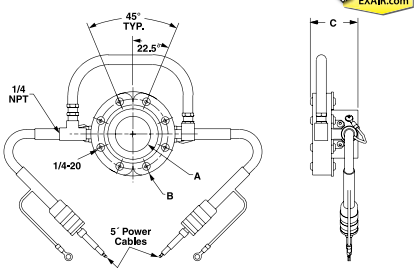
Super Ion Air Wipe Performance

80 PSIG (5.5 BAR)	Air Consumption		Sound Level	Dissipates 5kV*
MODEL	**SCFM**	**SLPM**	**dBA**	**SECONDS**
7162	29.5	835	77	0.20
7164	50.2	1422	81	0.20

*** 12" (305mm) from target.**

Super Ion Air Wipe Dimensions

DOWNLOAD drawings at EXAIR.com



MODEL	A	B	C
7162	2" (51mm)	4.75" (121mm)	2.70" (69mm)
7164	4" (102mm)	6.75" (171mm)	2.70" (69mm)

Order Direct We Ship From Stock

For Technical Assistance, Call An EXAIR Application Engineer 1-800-903-9247
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Ion Air Cannon™

Quiet, efficient, concentrated flow of ionized air removes static and dust!

What Is The Ion Air Cannon?

EXAIR's Ion Air Cannon neutralizes static electricity and cleans at distances up to 15 feet (4.6m) with no moving parts. It is ideal for those hard to reach spaces or confined areas that require a concentrated flow of static eliminating ions. With an optional pressure regulator, the air volume and velocity are infinitely adjustable over a wide range, for light to heavy duty applications.

Why The Ion Air Cannon?

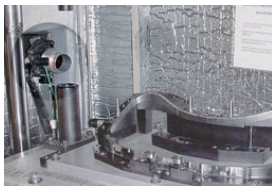
The Ion Air Cannon will **maximize ionized airflow while minimizing compressed air consumption.** A small amount of compressed air is used to entrain a high volume flow of surrounding air. This combined stream is ionized by an emitter point (shockless) and delivered to the charged surface. A hose or tube can be connected to the air intake of the Ion Air Cannon to draw quality air from another area. It requires only 10 PSIG (0.7 BAR) for most applications.

The compact design saves bench space and allows mounting in confined areas. The sturdy stand is pre-drilled and can be wall, bench or machine mounted. It incorporates a swivel adjustment for directing the airflow.

EXAIR's EFC (*shown on page 4*) is an electronic flow control for compressed air. For production lines, it can sense when no part is present and will automatically turn off the compressed air to the Ion Air Cannon until the next part moves into position.

The Model 7292 Ion Air Cannon System eliminates the static and dust prior to filling the bottles.

(3) Ion Air Cannons blow contaminants from car bodies prior to painting.



The Model 7292 Ion Air Cannon System eliminates static and dust from speedometer clusters prior to assembly.

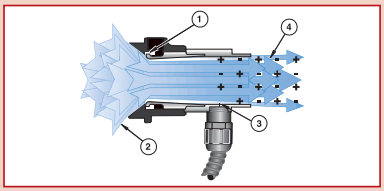
Applications

- Bag opening - form and fill
- Clean and neutralize parts
- Neutralizing shrink wrap
- Cleaning molded parts
- Removing static on assemblies
- Pre-paint dust removal
- Neutralizing slitting operations
- Package cleaning
- Container neutralization

Advantages

- Low air consumption
- Rapid static decay
- Quiet
- Effective up to 15 feet (4.6m)
- Shockless, non-radioactive
- Compact, rugged, easy to install
- Intake can be ducted
- No moving parts - low maintenance
- Variable force and flow

How The Ion Air Cannon Works



The Ion Air Cannon incorporates a Super Air Amplifier* and ionizing collar, energized by a power supply. A small amount of compressed air is injected into the barrel of the cannon (1) inducing a high volume flow of surrounding air to flow through it (2). An emitter point at the discharge end of the cannon (3) ionizes the entire airstream. The result is a high volume, conical flow of ionized air (4) capable of eliminating static and cleaning at distances up to 15 feet (4.6m). Because more than 90% of the ionized air is induced, the Ion Air Cannon produces maximum airflow at minimum air consumption.

Model 7492 Ion Air Cannon Kit includes the Ion Air Cannon, shim set, Model 7901 Power Supply, filter separator and pressure regulator (with coupler).

Ion Air Cannon	
Model #	**Description**
7192	Ion Air Cannon includes Super Air Amplifier, Emitter, Stand, and 5' (1.52m) length of shielded cable
7292	Ion Air Cannon and Power Supply
7492	Ion Air Cannon Kit *(see above)*
Deluxe Ion Air Cannon Kits	
7492DX	Kits include an Ion Air Cannon, EFC, shim set, Model 7901 Power Supply, filter separator and pressure regulator (with coupler).
Accessories and Components	
7902	Extension Cable, shielded, 5' (1.52m) length (1 male and 1 female fitting)
7901	2 Outlet Power Supply (115V, 50/60Hz)
7907	2 Outlet Power Supply (230V, 50/60Hz)
7940	4 Outlet Power Supply (115V, 50/60Hz)
7941	4 Outlet Power Supply (230V, 50/60Hz)
9001	Auto Drain Filter Separator, 3/8 NPT, 65 SCFM (1,841 SLPM)
9008	Pressure Regulator with Gauge, 1/4 NPT, 50 SCFM (1,415 SLPM)
7905	Static Meter

Ion Air Cannon Specifications

EXAIR Model 7901, 7907, 7940 or 7941 Power Supply (5kV) is required for operation. See page 81 for details.

Certifications: The Ion Air Cannon is UL Component Recognized to U.S. and Canadian safety standards. Power supplies are UL Listed to U.S. and Canadian safety standards, and are CE and RoHS compliant.

Electrical: For use with 5 kVrms, 5 milliamperes (max.) power supply.

Electrical Hazard: Shockless (less than 40 microamperes short circuited).

Do not use near flammable materials or gases.

Materials of Construction:

Air Cannon: Aluminum

Ionizing Collar: Aluminum

Plastic Parts: UL rated 94 HB **Emitter:** Stainless Steel

Maximum Ambient Temperature: 165°F (74°C)

Shims: Thicker shims can be installed easily if additional hard-hitting velocity is required. See page 37.

Compressed Air: 3/8 NPT inlet provided.

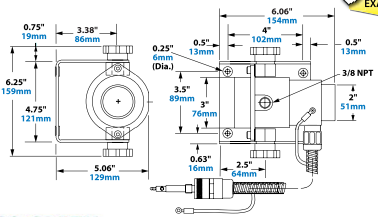
Ion Air Cannon Performance

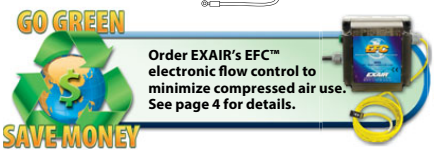
Pressure Supply		Air Consumption		Sound Level	Dissipates 5kV*
PSIG	**BAR**	**SCFM**	**SLPM**	**dBA**	**SECONDS**
20	1.4	5.7	161	58	0.75
40	2.8	9.0	255	64	0.60
60	4.1	12.2	345	70	0.50
80	5.5	15.5	439	72	0.43
100	6.9	18.7	529	74	0.37

* 12" (305mm) from target. For airflow pattern, see Super Air Amplifier on page 40.

Ion Air Cannon Dimensions

DOWNLOAD drawings at EXAIR.com





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*Patent #5402938

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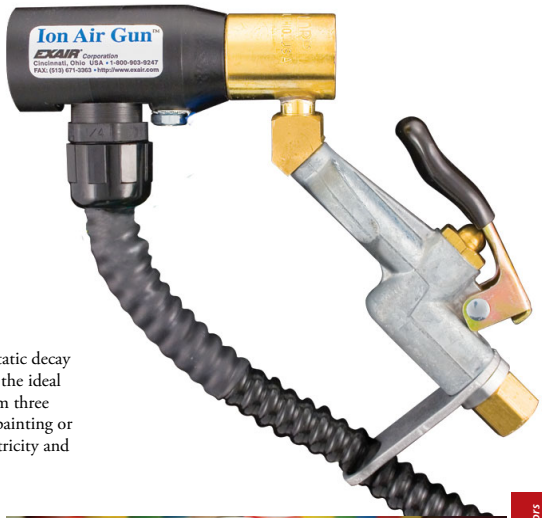
Ion Air Gun™



Rugged, ergonomic static eliminating gun is a lightweight, effective spot cleaner!

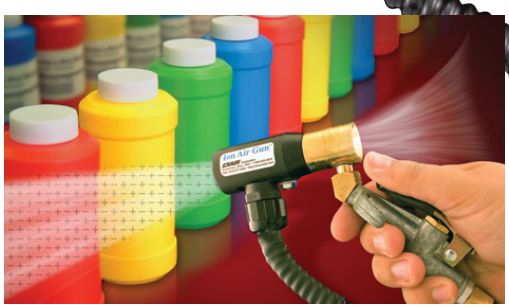
What Is The Ion Air Gun?

EXAIR's Ion Air Gun combines incredibly fast static decay rates with low compressed air consumption. It is the ideal way to remove static, contaminants and dust from three dimensional parts prior to assembly, packaging, painting or finishing. The Ion Air Gun neutralizes static electricity and cleans at distances up to 15 feet (4.6m).

Why The Ion Air Gun?

The Ion Air Gun induces surrounding airflow through the gun at a ratio of 5:1, minimizing compressed air usage and maximizing ionized airflow. The force can be adjusted from a "blast" to a "breeze". A comfortable grip and hand position allows hours of continuous use without fatigue.

The Ion Air Gun is quiet, lightweight and features a hanger hook for easy storage. The 10 foot (3m) shielded power cable is extremely flexible, designed for rugged industrial use.



The Model 7293 Ion Air Gun neutralizes and cleans plastic bottles prior to labeling.

Applications

- Pre-paint dust removal
- Clean and neutralize three dimensional parts
- Removing dust from optics
- Cleaning molded parts
- Photo finishing
- Lens cleaning
- Furniture finishing
- Package cleaning
- Container neutralization

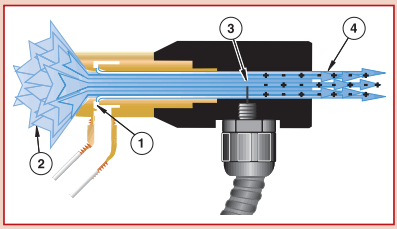
Advantages

- Rugged, lightweight, easy to use
- Rapid static decay
- Low air consumption
- Quiet
- Effective up to 15 feet (4.6m)
- Shockless, non-radioactive
- Strong blowoff force and flow
- Low maintenance
- Meets OSHA pressure and noise level requirements

The Model 7293 Ion Air Gun cleans plastic parts prior to packaging.

Ion Air Gun

How The Ion Air Gun Works



The Ion Air Gun incorporates a High Velocity Air Jet and electrically energized emitter point. A small amount of compressed air is injected into the air jet (1) inducing high volume flow of surrounding air (2) to pass through it.

The emitter point (shockless) at the discharge end of the gun (3) ionizes the entire airstream. **The result is a high volume flow of ionized air (4) capable of neutralizing high static charges in fractions of a second.** An optional filter and regulator clean the compressed air and allow infinite adjustment of airflow and velocity.

Ion Air Gun Specifications

EXAIR Model 7901, 7907, 7940 or 7941 Power Supply (5kV) is required for operation. See page 81 for details.

Certifications: The Ion Air Gun is UL Component Recognized to U.S. and Canadian safety standards. Power supplies are UL Listed to U.S. and Canadian safety standards, and are CE and RoHS compliant.

Electrical: For use with 5 kVrms, 5 milliamperes (max.) power supply.

Electrical Hazard: Shockless (less than 40 microamperes short circuited).

Do not use near flammable materials or gases.

Materials of Construction:

Metal Parts: Brass, Zinc and Stainless Steel

Plastic Parts: UL rated 94 HB

Emitter: Stainless Steel

Maximum Ambient Temperature: 165°F (74°C)

Compressed Air: 1/4 NPT inlet provided.

Ion Air Gun Performance

Pressure Supply		Air Consumption		Sound Level	Dissipates 5kV*
PSIG	BAR	SCFM	SLPM	dBA	SECONDS
20	1.4	7.4	209	67	0.45
40	2.8	11.5	325	74	0.33
60	4.1	15.8	447	79	0.24
80	5.5	22.0	622	82	0.18
100	6.9	24.0	679	85	0.18

*** 6" (152mm) from target. For airflow pattern, see Model 6013 High Velocity Air Jet on page 50.**

Model 7493 Ion Air Gun Kit includes the Ion Air Gun, Model 7901 Power Supply, filter separator and pressure regulator (with coupler).

80% of the delivered air is induced, minimizing air consumption of the Ion Air Gun.

Ion Air Gun	
Model #	**Description**
7193	Ion Air Gun Only includes 10' (3m) shielded cable*
7293	Ion Air Gun and Power Supply
7493	Ion Air Gun Kit includes the Ion Air Gun, Model 7901 Power Supply, filter separator and pressure regulator (with coupler).

*** For special length cables, please contact the factory.**

Accessories and Components	
Model #	**Description**
7901	2 Outlet Power Supply (115V, 50/60Hz)
7902	Extension Cable (1-Male end 1-Female end), shielded, 5' (1.52m) length. Multiple lengths available.
7907	2 Outlet Power Supply (230V, 50/60Hz)
7940	4 Outlet Power Supply (115V, 50/60Hz)
7941	4 Outlet Power Supply (230V, 50/60Hz)
9001	Auto Drain Filter Separator, 3/8 NPT, 65 SCFM (1,841 SLPM)
9005	Oil Removal Filter, 3/8 NPT, 15-37 SCFM (425-1,048 SLPM)
9008	Pressure Regulator with Gauge, 1/4 NPT, 50 SCFM (1,415 SLPM)
7905	Static Meter

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Ion Air Jet™

Air saving Ion Air Jet is an effective spot cleaner!

Choose permanent mount or flexible hose with base!

What Is The Ion Air Jet?

EXAIR's Ion Air Jet delivers a concentrated airflow that can cover a precise spot without disturbing other areas. This quiet, focused airstream provides incredibly fast static decay rates and cleaning ability. The Ion Air Jet is the ideal way to remove static and dust from small parts prior to shrink wrapping, packaging, printing, painting or finishing.

Why The Ion Air Jet?

The Ion Air Jet induces surrounding airflow at a ratio of 5:1, minimizing compressed air use and maximizing ionized airflow. Force can be adjusted from a "blast" to a "breeze".

Your Choice Of Permanent Mount or Flexible Stay Set Hose™

For permanent mount applications, the compact Ion Air Jet is the best choice since it is lightweight and easy to install using the 1/8 NPT male inlet. For applications where frequent repositioning is required, the flexible Stay Set Ion Air Jet™ is ideal. This version can be placed in close proximity and the hose bent to aim the ionized airstream at the localized area. Since the hose has "memory" it will not creep or bend, always keeping the aim until physically moved to the next position.

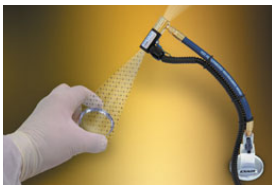
The Stay Set Ion Air Jet comes complete with a magnetic base that allows easy mounting and portability on a machine, a bench or other surface. A shutoff valve on the base provides infinite control of the force and flow. For hands free operation, an optional Model 9040 Foot Pedal (requires floor or machine mounting) is available.

Applications

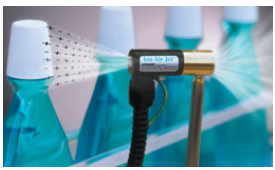
- Three dimensional parts
- Bottle cleaning
- Screen printing
- Shrink bands
- Ink jet printing
- Part cleaning
- Package cleaning

Advantages

- Low cost
- Rapid static decay
- Quiet
- Shockless, non-radioactive
- Compact, rugged, easy to install
- Stay Set Hose for accurate placing
- Low air consumption



The Model 7494-9362 Stay Set Ion Air Jet Kit cleans dust from a glass lens prior to installation on a gauge.



The Model 7294 Ion Air Jet and Power Supply neutralize and clean mouthwash bottles before installing the tamper-proof seal.

The Model 7910 Instant Static Elimination Station removes contaminants on plastic clamshell packages.

Ion Air Jet

How The Ion Air Jet Works

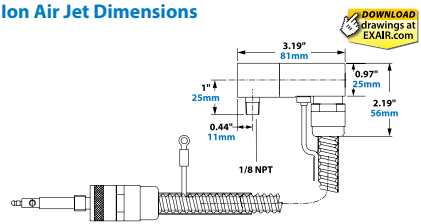
The Ion Air Jet functions the same as the Ion Air Gun without the blowgun handle. For details on how it works, see page 94 "*How The Ion Air Gun Works*".

Ion Air Jet Performance

Pressure Supply		Air Consumption		Sound Level	Dissipates 5kV*
PSIG	BAR	SCFM	SLPM	dBA	SECONDS
20	1.4	7.4	209	67	0.45
40	2.8	11.5	325	74	0.33
60	4.1	15.8	447	79	0.24
80	5.5	22.0	622	82	0.18
100	6.9	24.0	679	85	0.18

*** 6" (152mm) from target. For airflow pattern, see Model 6013 High Velocity Air Jet on page 50.**

Ion Air Jet Dimensions



Ion Air Jet	
Model #	**Description**
7194	Ion Air Jet Only includes 5' (1.52m) shielded cable*
7294	Ion Air Jet and Power Supply
7494	Ion Air Jet Kit includes Power Supply, filter separator and pressure regulator (with coupler).
Stay Set Ion Air Jet	
7194-9362	Stay Set Ion Air Jet includes 5' (1.52m) shielded cable*, one outlet magnetic base with shutoff valve, and 12" (305mm) Stay Set Hose.
7294-9362	Stay Set Ion Air Jet and Model 7901 Power Supply (115V, 50/60Hz)
7494-9362	Stay Set Ion Air Jet Kit *(see detail at right)*
7495-9362	Deluxe Stay Set Ion Air Jet Kit *(see detail at right)*
7910	Instant Static Elimination Station *(see detail at right)*

*** For special length cables, please contact the factory.**

Accessories and Components	
Model #	**Description**
7901	2 Outlet Power Supply (115V, 50/60Hz)
7907	2 Outlet Power Supply (230V, 50/60Hz)
7940	4 Outlet Power Supply (115V, 50/60Hz)
7941	4 Outlet Power Supply (230V, 50/60Hz)
9001	Auto Drain Filter Separator, 3/8 NPT, 65 SCFM (1,841 SLPM)
9008	Pressure Regulator with Gauge, 1/4 NPT, 50 SCFM (1,415 SLPM)
9040	Foot Pedal, 1/4 NPT, 60 SCFM (1,698 SLPM)
7905	Static Meter

Ion Air Jet Specifications

EXAIR Model 7901, 7907, 7940 or 7941 Power Supply (5kV) is required for operation. See page 81 for details.

Certifications: The Ion Air Jet is UL Component Recognized to U.S. and Canadian safety standards.

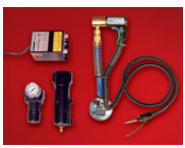
Power supplies are UL Listed to U.S. and Canadian safety standards, and are CE and RoHS compliant.

Electrical: For use with 5 kVrms, 5 milliamperes (max.) power supply.

Electrical Hazard: Shockless (less than 40 microamperes short circuited).
Do not use near flammable materials or gases.

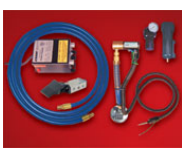
Materials of Construction:
Metal Parts: Brass and Stainless Steel
Plastic Parts: UL rated 94 HB
Emitter: Stainless Steel
Maximum Ambient Temperature: 165°F (74°C)
Compressed Air: 1/8 NPT inlet provided on Ion Air Jet.
1/4 NPT inlet provided on Stay Set Ion Air Jet.

Model 7494 Ion Air Jet Kit includes the Ion Air Jet, Model 7901 Power Supply, filter separator and pressure regulator (with coupler).



Model 7494-9362 Stay Set Ion Air Jet Kit includes the Stay Set Ion Air Jet, Model 7901 Power Supply, filter separator and pressure regulator (with coupler).

Model 7910 Instant Static Elimination Station includes the Stay Set Ion Air Jet, Model 7901 Power Supply, foot pedal and (2) 10' (3m) hoses.



Model 7495-9362 Deluxe Stay Set Ion Air Jet Kit includes the Stay Set Ion Air Jet, Model 7901 Power Supply, filter separator and pressure regulator (with coupler), foot pedal and 10' (3m) hose.

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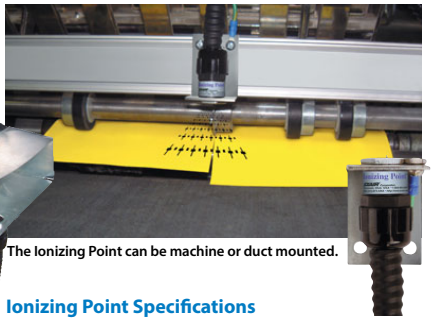
Ionizing Point™

Single point ionizer for spot neutralization!



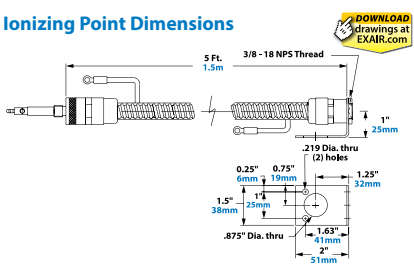
The Ionizing Point can be machine or duct mounted.

What Is The Ionizing Point?

EXAIR's **Ionizing Point** is a compact, single point ionizer ideal for winding, rewinding or slitting operations. It can also be mounted through a duct to neutralize static charges due to moving air or materials.

The shockless Ionizing Point delivers a high concentration of positive and negative ions for fast static decay. It can neutralize any surface within 2" (51mm).

Ionizing Point Dimensions



Ionizing Point Performance

	Distance From Charged Surface		
	0.50" (13mm)	1" (25mm)	2" (51mm)
Dissipates 5kV (seconds)	0.12	0.18	0.24

Applications

- Winding
- Rewinding
- Slitting
- Neutralizing ducted air

Advantages

- Low cost
- Rapid static decay
- Shockless
- Non-radioactive
- Compact

Ionizing Point Specifications

EXAIR Model 7901, 7907, 7940 or 7941 Power Supply (5kV) is required for operation. See page 81 for details.

Certifications: The Ionizing Point is UL Component Recognized to U.S. and Canadian safety standards.

Power supplies are UL Listed to U.S. and Canadian safety standards, and are CE and RoHS compliant.

Electrical: For use with 5 kVrms, 5 milliamperes (max.) power supply.

Electrical Hazard: Shockless (less than 40 microamperes short circuited). **Do not use near flammable materials or gases.**

Materials of Construction:
Metal Parts: Steel (bracket) and Stainless Steel
Plastic Parts: UL rated 94 HB
Emitter: Stainless Steel

Maximum Ambient Temperature: 165°F (74°C)

The Model 7299 Ionizing Point System includes the Ionizing Point, Model 7901 Power Supply and mounting bracket.

Ionizing Point	
Model #	**Description**
7199	Ionizing Point Only includes 5' (1.52m) shielded cable*
7299	Ionizing Point System *(see detail above)*

* For special length cables, please contact the factory.

Accessories and Components	
Model #	**Description**
7901	2 Outlet Power Supply (115V, 50/60Hz)
7907	2 Outlet Power Supply (230V, 50/60Hz)
7940	4 Outlet Power Supply (115V, 50/60Hz)
7941	4 Outlet Power Supply (230V, 50/60Hz)
7905	Static Meter

Static Meter

Locate the source of the static problem!

Digital Static Meter Locates The Source!

The **Model 7905 Digital Static Meter** allows easy one-hand static measurements. In most cases, the highest voltage reading will indicate the source of the static problem. Sensitive and responsive, it indicates the surface voltage and polarity on objects up to ±20 kV when measured one inch (25mm) away.

The Digital Static Meter features a push button "hold" for readings, a low battery indicator and an automatic "power off". A "zero" button to zero the instrument ensures an accuracy of ±5% of the reading when it is one inch (25mm) from the charged surface.

The Model 7905 Digital Static Meter comes complete with a hard-shell plastic case and a 9 volt battery. Certification of the accuracy and calibration traceable to NIST (National Institute of Standards and Technology) is also included. Calibration is available.

AC Sensor

Verify the presence of voltage!

Locate energized circuits, defective grounds and induced voltages!

c UL us LISTED

Detect The Presence Or Absence Of Voltage!

The **Model 7929 AC Sensor** provides non-contact verification that a voltage is present. The tip glows bright red and an audible tone is heard when voltage is detected.

The AC Sensor is an ideal way to make sure there is power going to your ionizer. It can also be used to test wall receptacles, switches, fuses, junction boxes and more. It is even possible to locate electricity through insulation, making it ideal for finding breaks in power cords and wires.
(Batteries included)

An INTELLIGENT COMPRESSED AIR® Product

EFC

EFC™

Electronic flow control minimizes compressed air use for blow off, drying, cooling, conveying and static elimination operations!

Dramatically reduces compressed air costs by turning off the air when no part is present!

What Is The EFC?

EXAIR's EFC™ is a user-friendly electronic flow control for compressed air that is designed to minimize compressed air use on blow off, drying, cooling, conveying and static elimination operations. The EFC combines a photoelectric sensor with a timing control that limits compressed air use by turning it off when no part is present. The timing control permits easy tuning to the application requirements while providing flexibility in sensing distance. The EFC also has eight programmable on and off modes.

Why The EFC?

For most companies, the air compressor uses more electricity than any other type of equipment. One simple operation that uses compressed air can easily waste thousands of those electricity dollars per year if not properly controlled. The EFC has been designed to improve efficiency by minimizing compressed air use and, as a result, reduce compressed air costs. It turns on the air only when a part is present and provides just enough air to complete a specific task or operation.

The EFC has an easy electrical connection for voltages from 100 to 240VAC, 50/60Hz making it suitable for applications throughout the world. The compact photoelectric sensor has a sensitivity adjustment and detects objects up to 3' (1m) away. The sensor has superior immunity to noise and inductive loads that are common to industrial environments and installs easily in tight spaces with the supplied mounting bracket. The control system provides flexibility with numerous valve operating modes and timing delays. The polycarbonate enclosure is suitable for use in a wide range of applications including those located in wet environments.

Applications

- Auto body blowoff
- Package cleaning
- Part drying after wash
- Dust removal
- Scrap removal
- Filling operations
- Cooling hot parts
- Neutralizing static
- Cleaning molded parts

Advantages

- Easy electrical hook-up; 100-240VAC, 50/60Hz
- NEMA 4/IP66 environments
- Compact sensor for mounting in tight spaces
- Eight function analog timer for on/off, pulsing and delay control
- Timer setting from 0.10 sec. to 120 hrs.
- Sensor withstands water and dust for accurate readings
- Sensor has superior immunity to noise and inductive loads
- Sensor has long distance sensing up to 3 feet (1m)

Photoelectric sensor withstands water and dust.

Electronic Flow Control

Model #	Description
9055	EFC Electronic Flow Control, 40 SCFM (1,133 SLPM), solenoid valve, 1/4 NPT
9056	EFC Electronic Flow Control, 100 SCFM (2,832 SLPM), solenoid valve, 1/2 NPT
9057	EFC Electronic Flow Control, 200 SCFM (5,664 SLPM), solenoid valve, 3/4 NPT
9064	EFC Electronic Flow Control, 350 SCFM (9,911 SLPM), solenoid valve, 1 NPT

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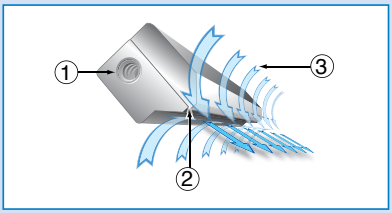
How The Super Air Knife Works



Compressed air flows through an inlet (1) into the plenum chamber of the Super Air Knife. The flow is directed to a precise, slotted orifice. As the primary airflow exits the thin slotted nozzle (2), it follows a flat surface that directs the airflow in a perfectly straight line. This creates a uniform sheet of air across the entire length of the Super Air Knife. Velocity loss is minimized and force is maximized as the room air (3) is entrained into the primary airstream at a ratio of 40:1. The result is a well defined sheet of laminar airflow with hard-hitting force and minimal wind shear.

Intelligent Use Of Compressed Air

Almost every industrial facility has at least one compressor that is used for hundreds of different tools, equipment and operations. While most applications for compressed air present no real problems, some do. Improper use can translate into unnecessary energy costs, high noise levels and dangerous exposure of personnel to high pressure air.

Reduce Energy Costs

The best way to cut energy costs is through proper maintenance and use of the compressed air system. Leaks and dirty filters require maintenance on a regular basis. Energy savings can also be realized when replacing outdated motors and controls with high efficiency models that often pay for themselves in a short period of time. The most important factor to dramatically boost efficiency is proper use. **The Super Air Knife uses only 1/3 of the compressed air of typical blowoffs** used in cleaning, cooling and drying operations and can be instantly cycled on and off.

Reduce Noise Levels

High noise levels are a common problem for many plants. Compressed air noise often exceeds OSHA (Occupational Safety and Health Administration) noise level exposure requirements, resulting in hearing loss to those working in close proximity. The sound level of the Super Air Knife is quiet at 69 dBA, even at high pressures of 80 PSIG (5.5 BAR). Using the Super Air Knife, it is possible to obtain hard-hitting force without the high noise.

OSHA Maximum Allowable Noise Exposure

Hours per day (constant noise)	8	7	4	3	2	1	0.5
Sound level dBA	90	91	95	97	100	105	110

OSHA Standard 29 CFR - 1910.95 (a)

Eliminate Harmful Dead Ended Pressures

Air can be dangerous when the outlet pressure of a hole, hose or copper tube is higher than 30 PSIG (2 BAR). In the event the opening is blocked by a hand or other body part, air may enter the bloodstream through the skin, resulting in a serious injury. The Super Air Knife has been engineered for safety and cannot be dead ended. It is safe to operate at higher pressures and meets OSHA standard 1910.242(b).

Replacement For Expensive, Noisy Blowers

Energy conscious plants might think a blower to be a better choice due to its slightly lower electrical consumption compared to a compressor. In reality, a blower is an expensive capital expenditure that requires frequent downtime and costly maintenance of filters, belts and bearings. Here are some important facts:

- Filters must be replaced every one to three months.
- Belts must be replaced every three to six months.
- Blower bearings wear out quickly due to the motor that must turn at 17-20,000 RPM in order to generate effective airflows.
- Poorly designed seals that allow dirt and moisture infiltration along with environments above 125°F (52°C) decrease the one year bearing life.
- **Typical bearing replacement is at least once a year at a cost near $1000.**
- Many bearings can't be replaced in the field, resulting in downtime to send the assembly back to the manufacturer.

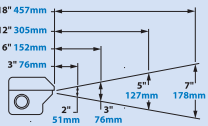
Blowers take up a lot of space and often produce sound levels that exceed OSHA noise level exposure requirements. Air volume and velocity are often difficult to control since mechanical adjustments are required.

Super Air Knife Performance with .002" (0.05mm) thick shim installed

Pressure Supply		Air Consumption per Inch (25mm)		Velocity @ 6" (152mm) from target		Sound Level @ 3' (914mm)	Force per Inch (25mm) @ 6" (152mm) from target	
PSIG	BAR	SCFM	SLPM	FPM	M/S	dBA	OUNCES	GRAMS
20	1.4	1.1	31	5,000	25.4	57	0.6	17
40	2.8	1.7	48	7,000	35.6	61	1.1	31
60	4.1	2.3	65	9,600	48.8	65	1.8	51
80	5.5	2.9	82	11,800	59.9	69	2.5	71
100	6.9	3.5	99	13,500	68.5	72	3.2	91

12" (305mm) Super Air Knife tested

Airflow Pattern



Holes Drilled In Pipe

Pressure Supply		Air Consumption 1/16" (1.59mm) dia. hole		Air Consumption 3/32" (2.38mm) dia. hole		Air Consumption 1/8" (3.18mm) dia. hole		Air Consumption 3/16" (4.76mm) dia. hole		Air Consumption 1/4" (6.35mm) dia. hole	
PSIG	BAR	SCFM	SLPM	SCFM	SLPM	SCFM	SLPM	SCFM	SLPM	SCFM	SLPM
20	1.4	1.4	40	3.5	99	6.4	181	14.5	410	25	710
40	2.8	2.2	62	5.4	153	10.2	289	22.9	648	40	1,132
60	4.1	3.0	85	7.4	209	14	396	31	877	54	1,528
80	5.5	3.8	108	9.4	266	17.5	495	39.5	1,118	69	1,953
100	6.9	4.6	130	11.5	326	21.5	609	47.5	1,344	84	2,363

How To Calculate Air Savings:

The chart at the top of the page shows the air consumption of a Super Air Knife **per inch of length** (25mm) at various pressures. Comparable data is given for holes drilled in pipe.

To Determine Air Consumption for the Drilled Pipe

1. Determine the size of existing holes and supply pressure. From the chart, find air consumption per hole.
2. Multiply air consumption per hole times the number of holes to obtain total air consumption.

To Determine Air Consumption for the Super Air Knife

1. From the chart, find the air consumption per inch (25mm) at supply pressure and multiply by number of inches required.

Example:

1. Existing blowoff is 18" long pipe with 1/16" diameter holes on 1/2" spacing (37 holes), 80 PSIG supply. Air consumption from chart is 3.8 SCFM per hole. Total air consumption is 37 x 3.8 = 140.6 SCFM (3,981 SLPM).
2. Use 18" (457mm) Super Air Knife with standard .002" gap and 80 PSIG supply. Air consumption from chart is 2.9 SCFM per inch. Total air consumption is 18 x 2.9 = 52.2 SCFM (1,478 SLPM).
3. Compressed air saved = 140.6 SCFM - 52.2 SCFM = 88.4 SCFM (2,503 SLPM).
4. Most large plants know their air cost. If you don't know your actual cost, a reasonable average to use is $0.25 per 1,000 SCF (28,317 SL).
5. Dollars saved per hour = SCFM saved x 60 minutes x cost/1,000 SCF = 88.4 x 60 x $0.25/1,000
   = $1.33/hour
   = $53.20 per 40 hour week
   = $2,766.40 per year savings

Super Air Knife Specifications

The Super Air Knife is available in standard lengths of 3", 6", 9" 12", 18", 24", 30", 36", 42", 48", 54", 60", 72", 84", and 96" (76, 152, 229, 305, 457, 610, 762, 914, 1067, 1219, 1372, 1524, 1829, 2134 and 2438mm). **Special lengths and unlimited system lengths are available.** Any number of Super Air Knives may be installed across a given area.

Compressed Air Inlets: A Super Air Knife has compressed air inlets on each end and the bottom. Lengths 24" (610mm) and longer should be supplied at opposite ends to maintain uniform airflow.

Filtration: The use of clean air is essential. Kits include an automatic drain filter with a 5 micron filter element that is sized properly for flow.

Materials of Construction: The Super Air Knife is available from stock in aluminum, Type 303 stainless steel, Type 316 stainless steel, and PVDF. Other materials are available on special order.

Mounting: The Universal Air Knife Mounting System is shown on page 20. The Super Air Knife can be supported by the compressed air pipe. Tapped holes (1/4-20) on the bottom are also provided.

Regulation: A pressure regulator on the compressed air supply provides infinite control of flow, force and air consumption. Kits include a pressure regulator that is sized properly for flow.

Shim Sets: The compressed air exhausts through a gap which is set with a shim positioned between the cap and the body of the Super Air Knife. Force and flow may be easily increased by adding shims to open the gap. Shim sets for aluminum Super Air Knives include a .001" (0.03mm) **Amber color shim**, .003" (0.08mm) **Green color shim**, and .004" (0.10mm) thick plastic **Tan color shim**. Shim sets for stainless steel Super Air Knives include (3) .002" (0.05mm) thick stainless steel shims. PVDF Super Air Knife shim sets include (3) .002" (0.05mm) PTFE shims.

Super Air Knife

Air Knife Mounting System

Provide Precise Positioning For Your Air Knife!

The Model 9060 Universal Air Knife Mounting System is used to provide secure, precise positioning for any of the EXAIR Air Knives. The Air Knife can quickly and easily be moved within close proximity of the part to improve effectiveness. It can be mounted on either the top or bottom of most Air Knives (Super Air Knife, Standard Air Knife and Full-Flow Air Knife). The Universal Air Knife Mounting System has a durable, stainless steel construction that is suitable for a variety of industrial applications.

Model 9060 Universal Air Knife Mounting System

The mounting system can also be used with EXAIR Static Eliminators. For the Super Ion Air Knife, it can be mounted on the top. Bottom mounting is possible on Super Ion Air Knives that are 18" (457mm) or longer. For the Standard Ion Air Knife, it can be top mounted on any length. Bottom mounting is possible on Standard Ion Air Knives that are 9" (229mm) or longer.

The Universal Air Knife Mounting System can be articulated into any position and provides a maximum extension of 30" (762mm). A 1/2" diameter hole is required for mounting. Alternatively, the bolt can be threaded directly into a 1/2"-13 tapped hole. For any style air knife that is 24" (610mm) or longer, it is recommended that (2) Universal Air Knife Mounting Systems be used to obtain a secure mounting.

Air Knife Mounting System

Model #	Description
9060	Universal Air Knife Mounting System

Air Knife Plumbing Kit

Super Air Knives that are 24" (610mm) to 42" (1067mm) long must be supplied with compressed air at both ends to maintain uniform airflow across the length. When lengths exceed 42" (1067mm), the compressed air must be supplied at both ends and the center. The Universal Air Knife Plumbing Kit provides properly sized Nitrile/PVC compressed air hose and brass fittings to interconnect the bottom or end compressed air inlets for best performance. A pressure gauge to monitor pressure at the Super Air Knife is included. The inlet is 1/2 NPT.

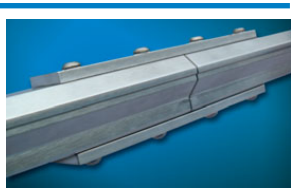
The Universal Air Knife Plumbing Kit provides the hose and fittings to couple the inlets for best performance.

Air Knife Plumbing Kit

Model #	Description
9076	Universal Air Knife Plumbing Kit - for lengths up to 42" (1067mm)
9077	Universal Air Knife Plumbing Kit - for lengths 48" - 54" (1219 - 1372mm)
9078	Universal Air Knife Plumbing Kit - for lengths 60" - 84" (1524 - 2134mm)
9079	Universal Air Knife Plumbing Kit - for lengths 90" - 108" (2286 - 2743mm)

Coupling Bracket Kits

Some applications require a Super Air Knife that is longer than our 54" (1372mm) length. Coupling Bracket Kits that join two Super Air Knives together are available. The kit includes two rigid plates along with the assembly screws. The bottom plate is supplied with a hole to access the bottom compressed air inlets. All models include stainless steel screws.

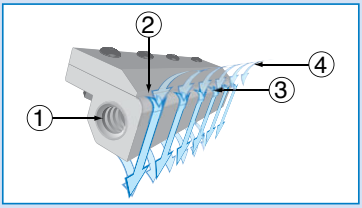


The Model 110900 Coupling Bracket Kit is used to join two aluminum Super Air Knives.

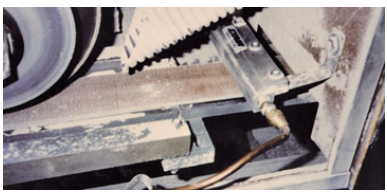
Air Knife Coupling Bracket Kit

Model #	Description
110900	Aluminum Coupling Bracket Kit
110900SS	Type 303 Stainless Steel Coupling Bracket Kit
110900SS-316	Type 316 Stainless Steel Coupling Bracket Kit

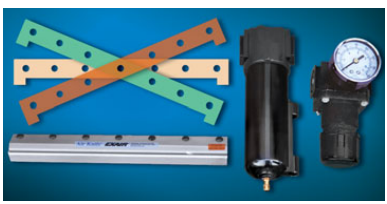
How The Standard Air Knife Works



Compressed air flows through the inlet (1) into a plenum chamber. It is then throttled through a thin nozzle (2) extending the length of the Standard Air Knife. This primary airstream adheres to the coanda profile (3), which turns it 90° and directs the flow down the face of the unit. The primary stream immediately begins to entrain surrounding air (4), for an amplification ratio of 30:1 at 6" (152mm) away.



A Model 2006 6" (152mm) Standard Air Knife blows powder loose from a belt so it can be vacuumed away.



Kits include a Standard Air Knife, shim set, filter separator, and pressure regulator (with coupler).

Standard Air Knife Specifications

The Standard Air Knife is available in ten standard lengths of 3", 6", 9", 12", 18", 24", 30", 36", 42" and 48" (76, 152, 229, 305, 457, 610, 762, 914, 1067, and 1219mm). This measurement refers to the airflow length. The overall length is 1" (25mm) longer. **Special lengths up to 48" (1219mm) are available.** Any number of Standard Air Knives may be installed across a given area.

Compressed Air Inlets: A Standard Air Knife has compressed air inlets on each end. Lengths 24" (610mm) and longer should be supplied with compressed air at each end to maintain uniform airflow.

Filtration: The use of clean air is essential. Kits include an automatic drain filter with a 5 micron filter element that is sized properly for flow.

Materials of Construction: The Standard Air Knife is available in either aluminum or stainless steel construction.

Mounting: See page 20 for complete details on the Universal Air Knife Mounting System. The Standard Air Knife can also be supported by the compressed air pipe.

Regulation: A pressure regulator on the compressed air supply provides infinite control of flow, force, and air consumption. Kits include a pressure regulator that is sized properly for flow.

Shim Sets: A Standard Air Knife has a .002" (0.05mm) gap setting. This gap is set with a shim positioned between the cap and body of the Standard Air Knife. Force and flow through the Standard Air Knife may be easily increased by adding shims to open the gap. Standard Air Knife Kits include a shim set (three additional shims). Shim sets for aluminum Standard Air Knives include a .001" (0.03mm) **Amber color shim**, .003" (0.08mm) **Green color shim**, and .004" (0.10mm) thick plastic **Tan color shim**. Shim sets for stainless steel Standard Air Knives include (3) .002" (0.05mm) thick stainless steel shims.

Standard Air Knife Performance with .002" (0.05mm) thick shim installed

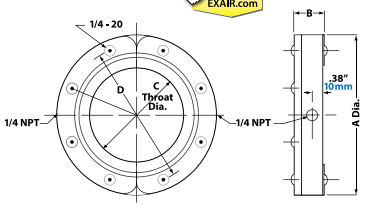
Pressure Supply		Air Consumption per Inch (25mm)		Velocity @ 6" (152mm) from target		Sound Level @ 3' (914mm)	Force per Inch (25mm) @ 6" (152mm) from target	
PSIG	BAR	SCFM	SLPM	FPM	M/S	dBA	Ozs	Grams
20	1.4	1.3	37	4,000	20.3	65	0.45	13
40	2.8	2.0	57	5,800	29.5	74	1.1	31
60	4.1	2.7	76	8,500	43.2	80	2.0	57
80	5.5	3.4	96	11,000	55.9	83	2.7	77
100	6.9	4.1	116	13,000	66.0	86	3.3	94

Note: Performance on lengths over 36" will vary. Contact an Application Engineer for details.

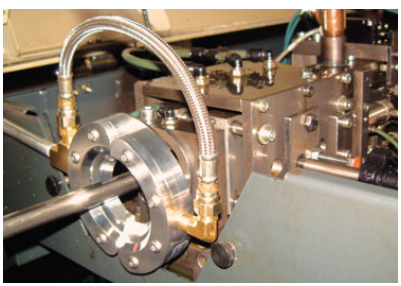
12" (305mm) Standard Air Knife tested

Air Wipe Dimensions

DOWNLOAD drawings at EXAIR.com



Super	Std		A	B	C	D
2400, 2400SS	2430	in	3.25	1.13	0.50	2.50
		mm	83	29	13	64
2401, 2401SS	2431	in	3.75	1.13	1	2.95
		mm	95	29	25	75
2402, 2402SS	2432	in	4.75	1.13	2	3.95
		mm	121	29	51	100
2403, 2403SS	2433	in	5.75	1.13	3	4.95
		mm	146	29	78	126
2404, 2404SS	2434	in	6.75	1.13	4	5.95
		mm	172	29	102	151
2405	2435	in	7.75	1.13	5	6.95
		mm	197	29	127	176
2406	2436	in	8.75	1.13	6	7.95
		mm	222	29	152	202
2407	2437	in	9.75	1.13	7	8.95
		mm	248	29	178	227
2409	2439	in	11.75	1.13	9	10.95
		mm	299	29	229	278
2411	2441	in	13.75	1.13	11	12.95
		mm	349	29	279	329



The Super Air Wipe eliminates the possibility of smoke during machining by wiping hydraulic oil from the bar stock as it enters the chuck.

Air Wipe Performance

80 PSIG (5.5 BAR)	Air Consumption		Sound Level @3' (914mm)
MODEL #	SCFM	SLPM	dBA
2400, 2400SS, 2430	13.9	394	75
2401, 2401SS, 2431	19.1	541	76
2402, 2402SS, 2432	29.5	835	77
2403, 2403SS, 2433	39.8	1,127	79
2404, 2404SS, 2434	50.2	1,422	81
2405, 2435	60.6	1,716	82
2406, 2436	71.0	2,010	84
2407, 2437	81.3	2,302	85
2409, 2439	102.1	2,891	87
2411, 2441	122.8	3,477	89

Super Air Wipe Specifications

The Super Air Wipe is available with throat diameters (I.D.) of 1/2", 1", 2", 3", 4", 5", 6", 7", 9", and 11" (13, 25, 51, 76, 102, 127, 152, 178, 229, and 279mm). **Special diameters are available. Please contact our factory.**

Compressed Air Inlets: The Super Air Wipe has compressed air inlets on each half. Stainless steel wire braided hose is supplied with sizes up to 4" (102mm) that couples the air supply of one half to the other. Sizes 9" (229mm) and larger have two inlets on each half that must be supplied with compressed air to maintain uniform airflow.

Filtration: The use of clean air is essential. Kits include an automatic drain filter separator with a 5 micron filter element that is sized properly for flow.

Materials of Construction: The Super Air Wipe is constructed of aluminum or stainless steel. All models use stainless steel shims and screws. Stainless steel wire braided hose is included with sizes up to 4" (102mm).

Temperature: Aluminum Super Air Wipes are rated for temperatures up to 400°F (204°C). Stainless steel models are rated for temperatures to 800°F (427°C).

Mounting: The Super Air Wipe can be supported by the compressed air supply pipe. Tapped holes (1/4-20) on the bottom of the Super Air Wipe can also be used for mounting.

Regulation: A pressure regulator on the compressed air supply provides infinite control of flow, force and air consumption. Kits include a pressure regulator that is sized properly for flow.

Shim Sets: The Super Air Wipe has a .002" (0.05mm) gap setting. The compressed air exhausts through a gap which is set with a stainless steel shim positioned between the cap and body of the Super Air Wipe. Force and flow through the Super Air Wipe may be easily increased by adding shims to open the gap. Kits include a shim set. Shim sets include (2) .002" (0.05mm) thick stainless steel shims.

Super Air Amplifier™

Powerful, efficient and quiet air mover for blowoff, cooling, and ventilation.

What Is The Super Air Amplifier?

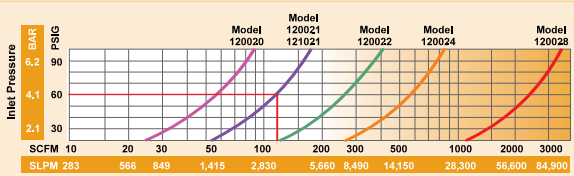
EXAIR's Super Air Amplifier has a patented* design that uses a special shim to maintain critical position of the component parts. As a result, a precise amount of compressed air is released at exact intervals toward the center of the Super Air Amplifier. These jets of air create a constant, high velocity outlet flow across the entire cross sectional area. Additional free air is pulled through the unit, resulting in higher amplification ratios. The balanced outlet airflow minimizes wind shear to produce sound levels that are typically three times quieter than other air movers.

Super Air Amplifiers are supplied with a .003" (0.08mm) slotted air gap which is ideal for most applications. Flow and force can be increased by replacing the shim with a thicker .006" (0.15mm) or .009" (0.23mm) shim. Model 120028 is supplied with a .009" (0.23mm) air gap. A .015" (0.39mm) shim is available for Model 120028.

Super Air Amplifier Performance at 80 PSIG (5.5 BAR)

	Air Consumption		Amplification	Air Volume at Outlet		Air Volume at 6" (152mm)		Sound Level
MODEL	SCFM	SLPM	RATIO	SCFM	SLPM	SCFM	SLPM	dBA
120020	6.1	173	12	73	2,066	219	6,198	69
120021	8.1	229	18	146	4,132	436	12,339	72
120022	15.5	439	22	341	9,650	1,023	28,951	72
120024	29.2	826	25	730	20,659	2,190	61,977	73
120028	120	3,396	25	3,000	84,900	9,000	254,700	88

Model 120028 tested with .009" (0.23mm) shim. All other models tested with .003" (0.08mm) shim.



Total Output Flow with .003" (0.08mm) thick shim installed. Excludes downstream entrainment. Model 120028 tested with a .009" (0.23mm) shim.

How To Determine Super Air Amplifier Total Output Flow And Air Consumption

Total Airflow: From the performance curves (above), determine total output flow for any Super Air Amplifier at any pressure.

Example: A Model 120021 at 60 PSIG (4.1 BAR) supply air pressure has a total output flow of 120 SCFM (3,398 SLPM).

Air Consumption: Divide the total output flow by the amplification ratio (shown in the chart) to determine air consumption for any Super Air Amplifier at any air pressure.

In the example above, the Model 120021 at 60 PSIG (4.1 BAR) supply air pressure has a total output flow of 120 SCFM (3,398 SLPM). Dividing this total output flow by its amplification ratio of 18 gives an air consumption of 6.7 SCFM (189 SLPM).

*Patent #5402938

Model 120022 2" (51mm) Super Air Amplifiers and Model 1122 2" Flat Super Air Nozzles blow off transmissions after they are machined.

(2) Model 120022 2" (51mm) Super Air Amplifiers dry small parts as they move down along a parts conveyor.

(5) Model 120022 2" (51mm) Super Air Amplifiers cool truck pistons.

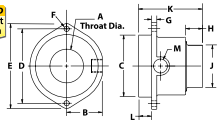
Super Air Amplifiers

Super Air Amplifier Dimensions

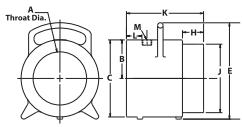
Super Air Amplifier Dimensions

MODEL #		A	B	C	D	E	F	G	H	J	K	L	M
120020	in	0.45	0.75	0.98	1.77	2.28	0.20	0.18	0.53	0.73	2.50	0.59	1/8 NPT
	mm	11	19	25	45	58	5	5	13	19	64	15	
120021	in	0.84	0.94	1.50	2.40	3.03	0.27	0.21	0.75	1.22	2.88	0.59	1/4 NPT
	mm	21	24	38	61	77	7	5	19	31	73	15	
120022	in	1.64	1.69	2.95	3.58	4.14	0.27	0.25	0.75	2	3	0.62	3/8 NPT
	mm	42	43	75	91	105	7	6	19	51	76	16	
120024	in	3.02	2.81	4.91	6.89	8.42	0.55	0.55	1.75	3.97	4.75	0.94	1/2 NPT
	mm	77	71	125	175	214	14	14	44	101	121	24	
120028	in	6.20	4.50	9	---	11.25	---	---	2.44	8	8.94	2.38	3/4 NPT
	mm	157	114	229	---	286	---	---	62	203	227	60	

DOWNLOAD drawings at EXAIR.com

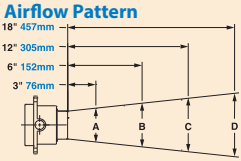


Model 120020-120024



Model 120028

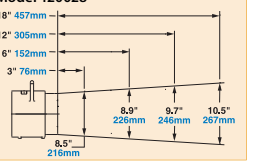
Airflow Pattern



MODEL #		A	B	C	D
120020	in	1.25	2.2	4.1	6
	mm	32	56	104	152
120021	in	2	2.9	4.7	6.5
	mm	51	74	119	165
120022	in	2.75	3.55	5.15	6.75
	mm	70	90	131	171
120024	in	4.5	5.3	6.9	8.5
	mm	114	135	175	216

Airflow Pattern

Model 120028



Super Air Amplifier Models

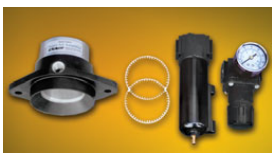
Super Air Amplifier Only

Super Air Amplifier Kits - includes a Super Air Amplifier, shim set, filter separator and pressure regulator (with coupler).

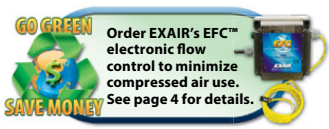
Deluxe Super Air Amplifier Kits - includes a Super Air Amplifier, EFC, shim set, filter separator and pressure regulator (with coupler).

Super Air Amplifier Shim Sets - includes (1) .006" (0.15mm) and (1) .009" (0.23mm) stainless steel shims (except 8" which includes (1) .015" (0.39mm) stainless steel shim).

Outlet Diameter	Super Air Amplifier Only Model	Super Air Amplifier Kit Model	Deluxe Super Air Amplifier Kit Model	High Temperature Air Amplifier Only Model	High Temperature Air Amplifier Kit Model	Super Air Amplifier Shim Set Model
3/4" (19mm)	120020	120220	120220DX	N/A	N/A	120320
1-1/4" (32mm)	120021	120221	120221DX	121021	121221	120321
2" (51mm)	120022	120222	120222DX	N/A	N/A	120322
4" (102mm)	120024	120224	120224DX	N/A	N/A	120324
8" (203mm)	120028	120228	120228DX	N/A	N/A	120328



Kits include a Super Air Amplifier, shim set, filter separator and pressure regulator (with coupler).

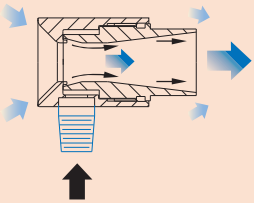


Accessories

Model #	Description
9001	Auto Drain Filter Separator, 3/8 NPT, 65 SCFM (1,841 SLPM)
9032	Auto Drain Filter Separator, 1/2 NPT, 90 SCFM (2,547 SLPM)
9002	Auto Drain Filter Separator, 3/4 NPT, 220 SCFM (6,230 SLPM)
9005	Oil Removal Filter, 3/8 NPT, 15-37 SCFM (425-1,048 SLPM)
9006	Oil Removal Filter, 3/4 NPT, 50-150 SCFM (1,415-4,248 SLPM)
9008	Pressure Regulator with Gauge, 1/4 NPT, 50 SCFM (1,415 SLPM)
9033	Pressure Regulator with Gauge, 1/2 NPT, 100 SCFM (2,830 SLPM)
9009	Pressure Regulator with Gauge, 3/4 NPT, 220 SCFM (6,230 SLPM)

How Air Jets Work

Air Jets utilize the coanda effect (wall attachment of a high velocity fluid) to produce air motion in their surroundings. As illustrated on the right, a small amount of compressed air (black arrows) is throttled through an internal ring nozzle above sonic velocity. A vacuum is produced, pulling large volumes of surrounding, or "free" air, through the jet (blue arrows). **Both the outlet and inlet can be ducted for remote positioning. If the end is blocked, flow simply reverses at well below OSHA dead ended pressure requirements.**



High Velocity Air Jet

Model 6013 1/8 NPT male
Material: Brass

The Model 6313 Air Jet Shim Set for the High Velocity Air Jet includes a .006" (0.15mm) and a .009" (0.23mm) thick shim. A .015" (0.38mm) shim comes installed with the Model 6013 Air Jet.

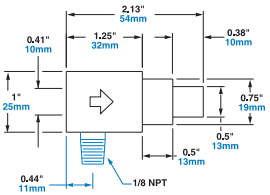
Model 6013 High Velocity Air Jet

Provides maximum thrust with a confined, directed airstream. It is the best choice for part ejection, chip removal, and part drying.

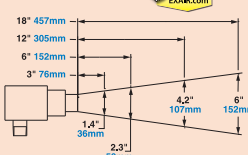
Shim Sets: Shims can be used to change the gap on the Model 6013 High Velocity Air Jet. Changing shims will alter air consumption, force, flow and vacuum capability. Order Model 6313 Air Jet Shim Set.

Air Consumption		Force*		Sound Level
SCFM	SLPM	Ozs	Grams	dBA
22	622	20	567	82

*Force measured at 12" (305mm) from target with a .015" (0.38mm) shim installed
Sound level measured at 3' (914mm)
All measurements taken at 80 PSIG (5.5 BAR)



Airflow Pattern



Adjustable Air Jet

Model 6019 1/8 NPT male
Material: Brass

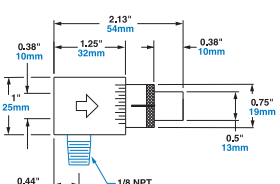
A combination of Model 6013 High Velocity Air Jets and Model 6042 Adjustable Air Amplifiers dry this engine casting.

Model 6019 Adjustable Air Jet

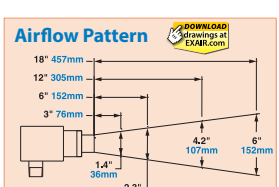
This is an adjustable version of the Model 6013 High Velocity Air Jet. Airflow and thrust are easily adjusted using the micrometer gap indicator.

Air Consumption		Force*		Sound Level
SCFM	SLPM	Ozs	Grams	dBA
18	509	16	453	83

* Force measured at 12" (305mm) from target with a .006" (0.15mm) factory setting
Sound level measured at 3' (914mm)
All measurements taken at 80 PSIG (5.5 BAR)



Airflow Pattern



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