

EXAIR®

MANUFACTURING INTELLIGENT COMPRESSED AIR® PRODUCTS SINCE 1983

Air Nozzles

Blowoff Guide

Third Edition



www.exair.com



EXAIR®

Air Nozzles

**Engineered Air Nozzles
reduce noise levels and air costs.**

**"Go Green" by upgrading your
blowoff, cooling, and drying
operation to the award winning
Super Air Nozzles!**

What Are Air Nozzles?

A simple solution to reduce excessive air consumption and noise levels on compressed air blowoff operations. EXAIR Air Nozzles produce outlet flows up to 25 times compressed air consumption using a small amount of compressed air as the power source. Many power companies now provide attractive rebates to plants who switch to engineered Super Air Nozzles!

Why Air Nozzles?

Air savings, compared to open copper tubes or pipes commonly used for blowoff, can be as high as 80%. Less compressed air means less noise. The typical noise level reduction is 10 dBA. All EXAIR Air Nozzles meet Occupational Safety and Health Administration (OSHA) maximum dead ended pressure and sound level exposure requirements and carry the CE mark.

An open 1/4" (6mm) copper tube, by contrast, ejects pure compressed air at up to 40 standard cubic feet per minute (1,133 SLPM), the entire output of a 10 horsepower compressor. Annual energy cost can exceed \$1,000 per year. Noise levels in excess of 100 dBA are commonly produced.

When supply pressure exceeds 30 PSIG (2 BAR), an open pipe, tube or drilled holes violates OSHA static pressure requirements.



Air Nozzles Advantages

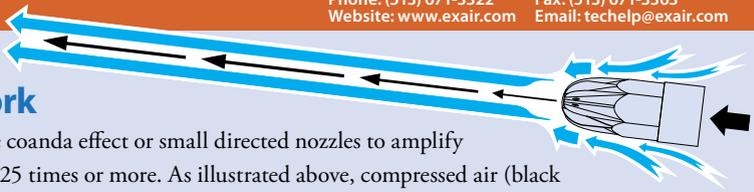
- Conserve compressed air
- Meets OSHA noise level requirements
- Meets OSHA pressure requirements
- Improved blowoff performance
- Improved production
- Compact
- Improved safety
- 10 dBA average noise reduction
- Reduced compressed air cost

Applications

- Part cleaning
- Chip removal
- Part drying
- Liquid blowoff
- Part cooling
- Material conveying
- Part ejection
- Fiber conveying
- Air assist

How Air Nozzles Work

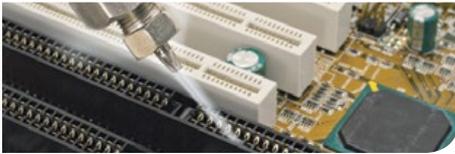
Air Nozzles use the coanda effect or small directed nozzles to amplify compressed airflow 25 times or more. As illustrated above, compressed air (black arrows) is ejected through a series of nozzles on the outer perimeter. As the air travels along the outer wall of the nozzle, surrounding air (blue arrows) is entrained into the stream. The airstream that results is a high volume, high velocity blast of air at **minimal consumption**. The air is always ejected so it can vent safely, **well below OSHA dead ended pressure requirements**, should the nozzle end be blocked.



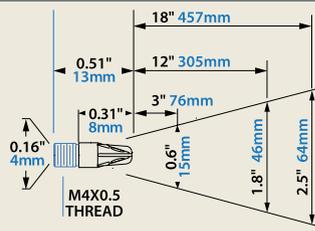
Atto Super Air Nozzle™

Model 1108SS, 1108-PEEK, 1108SS-NPT, 1108-PEEK-NPT

EXAIR's Atto Super Air Nozzle delivers the smallest, most precise blowoff. The air pattern for this tiny nozzle is forceful, measuring 1.0" in diameter when positioned 6" away from the surface. The 58 dBA noise level is a fraction of ordinary air nozzles.



Dimensions and Airflow Pattern



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

Air Consumption		Force *		Sound Level
SCFM	SLPM	Ozs	Grams	dBA
2.5	71	2.0	56.7	58



1108SS
 Type 316 Stainless Steel
1108-PEEK
 PEEK (plastic)
 M4 x 0.5



1108SS-NPT
 Type 316 Stainless Steel
1108-PEEK-NPT
 PEEK (plastic)
 1/8 NPT male



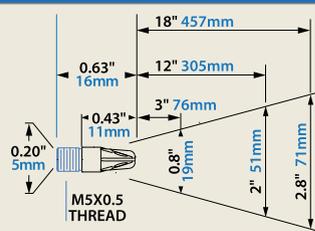
Pico Super Air Nozzle™

Model 1109SS, 1109-PEEK, 1109SS-NPT, 1109-PEEK-NPT

EXAIR's Pico Super Air Nozzle delivers a precise blowoff with a highly focused, forceful blast of airflow. The narrowly focused air pattern measures 1.25" in diameter at 6" away from the surface. The noise level is only 68 dBA.



Dimensions and Airflow Pattern



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

Air Consumption		Force *		Sound Level
SCFM	SLPM	Ozs	Grams	dBA
4.9	139	5.0	141.7	68



1109SS
 Type 316 Stainless Steel
1109-PEEK
 PEEK (plastic)
 M5 x 0.5



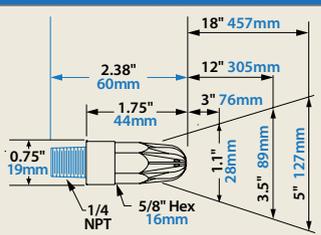
1109SS-NPT
 Type 316 Stainless Steel
1109-PEEK-NPT
 PEEK (plastic)
 1/8 NPT male

Super Air Nozzle™

Model 1100, 1100-PEEK, 1100SS, 1101, 1101-PEEK, 1101SS

EXAIR's award winning Super Air Nozzles deliver high performance suitable for a wide range of blowoff, drying and cooling applications. The aerodynamic design of this engineered Super Air Nozzle directs the air to a single point of convergence, delivering hard-hitting force. It dramatically reduces air consumption and, in many cases, can cut the noise level in half. All Super Air Nozzles eject the compressed air through holes located in recessed grooves that can not be blocked or dead ended.

Dimensions and Airflow Pattern



* Force measured at 12" (305mm) from target.

Sound level measured at 3' (914mm)

All measurements taken at 80 PSIG (5.5 BAR)

Air Consumption		Force *		Sound Level
SCFM	SLPM	Ozs	Grams	dBA
14	396	13	368	74

1100

Zinc Aluminum

1100-PEEK

PEEK (plastic)

1100SS

Type 316 Stainless Steel

1/4 NPT female



1101

Zinc Aluminum

1101-PEEK

PEEK (plastic)

1101SS

Type 316 Stainless Steel

1/4 NPT male

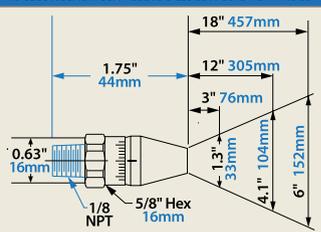


Adjustable Air Nozzles

Model 1009, 1009SS

Adjustable Air Nozzles are suitable for a wide variety of blowoff applications. The design allows you to "tune in" the force and flow to the application requirements, thereby minimizing air consumption. A micrometer-like dial indicates the gap setting. A set screw in the end can be tightened so the air nozzle holds the setting.

Dimensions and Airflow Pattern



* Force measured at 12" (305mm) from target with a .008" (0.20mm) factory setting.

Sound level measured at 3' (914mm)

All measurements taken at 80 PSIG (5.5 BAR)

Air Consumption		Force *		Sound Level
SCFM	SLPM	Ozs	Grams	dBA
13	368	12	340	79

1009

Aluminum

1009SS

Type 303 Stainless Steel

1/8 NPT male



Selecting The Right Air Nozzle

EXAIR manufactures a wide selection of Air Nozzles, which are divided into two groups. The first group includes Air Nozzles that deliver force up to 22 ounces (624 grams) and are suitable for most applications. The second group includes Air Nozzles that produce high force up to 23 lbs (10,433 grams) where additional reach and force are required.

Selecting an air nozzle is specific to each application. Below are some items to consider.



Air Consumption:

Lower compressed air use is important for every company. EXAIR has a wide selection to help you. Our engineered air nozzles can lower air use compared to commercial grade nozzles, open tube or pipes and homemade blowoffs. To get an idea about how much air we can save you, look at the air consumption specified for each nozzle.

Noise:

Compressed air blowoffs can be loud. The features designed into our air nozzles provide exceptionally quiet airflow exiting the nozzles. If you are trying to lower your environmental noise, EXAIR nozzles can play a role.

Matching existing pipe threads:

Open pipes that are already threaded can be made OSHA safe by installing an engineered air nozzle, just match the threads.

Materials:

Type 303 Stainless Steel- high temperatures and corrosive environments.

Type 316 Stainless Steel- high temperatures, corrosive environments, and mechanical wear.

Zinc aluminum alloy- general purpose applications.

PEEK- replaces metals in harsh environments. Offers chemical resistance and is non-marring.

Force:

The right amount of impact upon your part, surface or application can be the difference between success or failure. If you know the force you need, we have provided that value for you in our performance charts. If you need assistance with your selection, please contact an Application Engineer at 1-800-903-9247. We are here to help!



Safety Air Guns

"Go Green" by upgrading your blowoff, cooling, and drying operation to EXAIR's Safety Air Guns using award winning Super Air Nozzles!

Why EXAIR Safety Air Guns?

Inexpensive air guns are sold through many catalogs and industrial supply companies. Most have triggers or other parts that break quickly. Their performance is similar to open pipe, where they simply blow a lot of compressed air. In addition to the high air consumption, many produce noise levels that violate OSHA requirements. Some even generate dangerous dead end pressures that can result in serious or fatal injuries if blocked.

EXAIR's Safety Air Guns eliminate these problems. They are durable and comfortable to use. Each model uses an engineered Air Nozzle that provides superior performance by entraining large volumes of surrounding air. Safe operation is assured along with low air consumption and noise levels.



Precision Safety Air Gun is extremely lightweight and the most comfortable to operate during periods of extended use. The small diameter nozzle and extension will fit into tight spaces while providing strong blowing force. Chip Shields for worker safety are also available.



Soft Grip Safety Air Gun has a durable cast aluminum body that is suited for rugged industrial use. The ergonomic design has a large trigger for easy operation and a convenient hanger hook for easy storage. Extension Pipes, Chip Shields and Stay Set Hoses for hard to reach areas are available.



Heavy Duty Safety Air Gun is a powerful air gun with a durable cast aluminum body that is best suited for heavy use in rugged industrial environments. The ergonomic composite rubber grip and wide curved trigger can be used for hours without fatigue. Chip Shields and Extension Pipes for hard to reach areas are available.



Super Blast Safety Air Guns provide the strongest blowing force - ideal for long distance, wide area blowoff, cooling, and drying applications. The comfortable foam rubber handle provides a firm grip. The spring-loaded valve instantly shuts off the air supply if the air gun is dropped.

Safety Air Guns use engineered air nozzles for high performance!

