



## Air Amplifiers



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**Vent, exhaust, cool, dry, clean – with no moving parts!**

Air Amplifiers

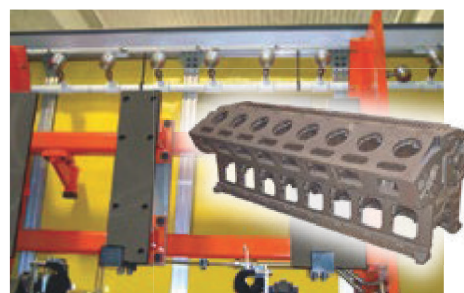
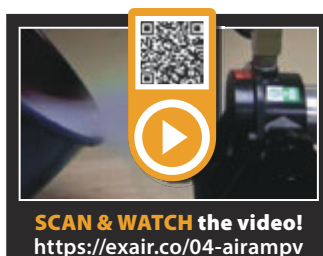
### What Are Air Amplifiers?

A simple, low cost way to move air, smoke, fumes, and light materials. Air Amplifiers utilize the Coanda effect, a basic principle of fluid dynamics, to create air motion in their surroundings. Using a small amount of compressed air as their power source, Air Amplifiers pull in large volumes of surrounding air to **produce high volume, high velocity outlet flows**. **Quiet, efficient Air Amplifiers will create output flows up to 25 times their consumption rate.**

### Why Air Amplifiers?

Air Amplifiers have no moving parts, assuring maintenance-free operation. No electricity is required. Flow, vacuum and velocity are easy to control. Outlet flows are easily adjusted by opening or closing the air gap. Supply air pressure can be regulated to fine tune outlet flow to meet application needs.

Both the vacuum and discharge ends of the Air Amplifier can be ducted, making them ideal for drawing fresh air from another location, or moving smoke and fumes away.



A series of Model 6042 2" (51mm) Adjustable Air Amplifiers blow coolant off 16 cylinder diesel engines.



Adjustable Air Amplifiers are ducted to draw clean air for drying.



A Model 120024 4" (102mm) Super Air Amplifier cools an engine during dynamometer testing.

### Applications

- Vent welding smoke
- Cool hot parts
- Dry wet parts
- Clean machined parts
- Distribute heat in molds/ovens
- Ventilate confined areas
- Dust collection
- Exhaust tank fumes

### Advantages Compared to Fans:

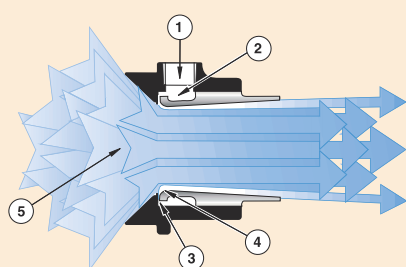
- Compact, lightweight, portable
- No electricity
- No moving parts – no maintenance
- Ends are easily ducted
- Instant on/off
- Variable force and flow
- No RF interference

### Compared to Venturis and Ejectors:

- More air volume with lower compressed air consumption
- Higher flow amplification
- No internal obstructions
- Meets OSHA pressure and noise requirements
- Quiet



## How Air Amplifiers Work



Compressed air flows through the air inlet (1) into an annular chamber (2). It is then throttled through a small ring nozzle (3) at high velocity. This primary airstream adheres to the Coanda profile (4), which directs it toward the outlet. A low pressure area is created at the center (5), inducing a high volume flow of surrounding air into the primary airstream. The combined flow of primary and surrounding air exhausts from the Air Amplifier in a high volume, high velocity flow.

## Air Amplifier Model Selection Guide

	Air Amplifier Comparison					
	Efficiency	Sound Level	Mounting Flange	Flow Adjustment	Temp. Rating	Corrosive Applications
Super Air Amplifier	High	Low	Yes	With Shims	275°F (135°C)	No
Aluminum Adjustable Air Amplifier	Medium	Variable	No	Infinite (No shims)	275°F (135°C)	No
Stainless Steel Adjustable Air Amplifier	Medium	Variable	No	Infinite (No shims)	400°F (204°C)	Yes
High Temperature Air Amplifier	High	Low	No	With Shims	700°F (374°C)	Yes

## Special Air Amplifiers

EXAIR will manufacture special Air Amplifiers suited to your specific application requirements. The Model 121021 High Temperature Air Amplifier (shown top right) was developed for moving hot air to surfaces requiring uniform heating while in a furnace or oven. Modeled after our Super Air Amplifier, the High Temperature Air Amplifier is the most efficient for pushing high volumes of hot air to points that typically remain cool. This special design is rated for environments up to 700°F (374°C) and its surface is protected from heat stress by a mil-spec. coating process (developed for the aircraft industry), allowing easy disassembly for changing shims or cleaning.

Another stainless steel version for flange mounting was developed as a fan back-up for exhausting flue gases from a furnace (shown middle right). In the event of a power failure, this special Air Amplifier can quickly evacuate the fumes that could be harmful to workers close by.

A PTFE plug was used with a stainless steel Adjustable Air Amplifier (shown bottom right) to help pull a sticky material through a process and prevent the material from depositing on the Air Amplifier.

EXAIR's Intelligent Compressed Air® products can be manufactured to your special requirements.

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



A Model 121021 1-1/4" (32mm) High Temperature Air Amplifier directs hot air to a rotational mold cavity for uniform wall thickness of the plastic part.



This special stainless steel flange-mount Air Amplifier was designed for exhausting hot flue gases from a furnace.



Adjustable Air Amplifier with PTFE plug helped pull a sticky material through a process and prevented the material from depositing on the Air Amplifier.