



# Confined Space Ventilation Safety Compliance

## The Saddle Vent® Ventilation Systems

### The Conductive Saddle Vent® Ventilation Systems

**Issue:** OSHA CFR29-1910.146 states “Many workplaces contain areas that are considered “Confined Spaces” because while they are not necessarily designed for people, they are large enough for workers to enter and perform certain jobs. A confined space also has limited or restricted means for entry or exit and is not designed for continuous occupancy. Confined spaces include, but are not limited to, tanks, vessels, silos, storage bins, hoppers, vaults, pits, manholes, tunnels, equipment housings, ductwork, pipelines, etc.” **CFR29-1910.146 Section 5.2 states** “Mechanical ventilation shall be used to control the confined space environment until the confined space atmosphere is deemed stable and continued until the last entrant egresses the confined space.”

**Solution:** Air System’s Industrial, Contractor, Venturi and Specialty lines of Confined Space Ventilation Systems offer a solution-based product for every application.

**Compliance:** OSHA CFR 29-1910.305 states “electrical equipment shall comply with NRTL, Nationally Recognized Testing Laboratories Standards and shall display the necessary Certified Markings. Certifications and approvals shall be appropriate for the products intended for the work environment.” Air Systems fans and blowers are certified to USA and Canadian standards.



### The Saddle Vent® Ventilation System

Typical Saddle Vent® Setup Procedure

5 ft. minimum set-back required

8" Blower or Fan

DUCT

MANHOLE LID

90° ELBOW

Manhole Opening

UNIVERSAL MOUNT

SADDLE VENT®

DUCT

*Select a blower or fan based on environmental conditions and the size of the confined space. For information or guidance in selecting the proper set-up, please contact Customer Service.*

STEP 1 - Install 6 ft. duct on 8" blower or fan  
 STEP 2 - Install 90° elbow on top of Saddle Vent®  
 STEP 3 - Install 8" duct on bottom of Saddle Vent®  
 STEP 4 - Install universal mount on Saddle Vent® and set in place with manhole lid for support  
 STEP 5 - Install duct from blower to 90° elbow  
 STEP 6 - Turn on blower or fan

**Warning:** For ventilation in hazardous locations, see warning below or call Customer Service for assistance.

**Warning:** For hazardous locations, follow ANSI / API 2015 and 2016 procedures

**WARNING: HAZARDOUS LOCATION OPERATIONS**  
 Use a certified explosion-proof blower or fan, conductive ducting and the conductive Saddle Vent® system. Attach all grounding wires and assure a complete circuit to the blower in order to remove static charges.



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*Air Systems International is the industry leader in Grade-D breathing air filtration & confined space ventilation and an innovator in portable area lighting.*



# Confined Space Ventilation Safety Compliance

## Axial Fan vs. Centrifugal Blower

### Choose the Best Fan or Blower for the Job

Standard Electric



Explosion Proof



## Axial Fans

### Axial Fans:

An axial fan creates high air flow but the blade design develops lower pressure. When used with ducting, the ventilation duct creates resistance and the axial fan becomes inefficient at longer distances. Axial fans are designed with several large paddle blades that develop a large volume of air flow (CFM).

### When to use:

Axial fans are lightweight, low cost and best when working at short distances with minimal ducting, preferably 15 to 25 foot flexible ducting.



## Centrifugal Blowers

### Centrifugal Blowers:

A centrifugal blower uses a "squirrel cage" designed with numerous forward curving blades on a circular wheel. The blades create significant volume (CFM) and very high air pressure (WG).

### When to use:

Centrifugal blowers are typically heavier and cost more than axial fans due to the motor required to run the blades. Centrifugal blowers are used to move air a long distance using long or multiple lengths of duct.



## In-Line Axial Fans

### In-line Axial Fans:

The in-line axial fan can be used by itself or used with a fan or blower as a velocity accelerator for long duct distances.

### When to use:

When ventilating at long distances, simply add an in-line fan to the ducting to increase or maintain air flow for long distances. In-line fans can be used with either axial or centrifugal blowers to extend longer ventilation distance.

## Venturi Air Blower

### Venturi Air Blower:

The Venturi air blower operates with an air hose and uses no moving parts or blades. Tremendous CFM is created by using a hollow hub that spins air similar to a jet engine.

### When to use:

With no mechanical blade, the Venturi is not specifically designed to push air through ducting. The Venturi is primarily used as a suction or push air device used on a chemical tank and can be used in conjunction with an axial or centrifugal fan to rapidly remove gases from a tank. Venturi bases are designed to fit American Petroleum Institute (API) standard tanks.



For a more comprehensive overview of confined space ventilation or custom blower solutions, please contact Air Systems Customer Service department.