

Occupational Health & Safety Inline Axial Fan for Hazardous Locations

Issue: Confined spaces are some of the most dangerous and potentially life-threatening work environments in industry, making ventilation, respiratory and PPE equipment an integral component of a total safety program. U.S. OSHA states “electrical equipment must be approved by a Nationally Recognized Testing Laboratory (NRTL) “. . . and stated in **29 CFR 1910.303(a)**. In addition, **NRTLs must approve this equipment using U.S. recognized test standards, 29 CFR 1910.7**” Proper selection and training with approved hazardous location safety equipment can reduce the cause of potential accidents and even loss of life. In order to select the proper equipment, the worker must first determine whether the location is considered a “Hazardous” or “Non-Hazardous” location. If the location is deemed to be Hazardous or Potentially Hazardous, the ventilation blower must be approved for use in the hazard location and an Explosion-Proof Electric or Pneumatic blower should be chosen.

Application: In order to stabilize the atmosphere in the confined space, continuous ventilation should be used before and during occupancy of the confined space. These fans can be used to provide fresh air to underground vaults, tanks, open pits, and many other similar areas. Inline fans can be placed in series to run long lengths of duct.

Recommendation: Once the confined space is determined to be hazardous through the use of a gas detection meter, the correct blower can be chosen to meet the working conditions and available power. Always inspect the blower for loose parts or debris that may cause harm to a worker. Make sure all electric blowers are properly grounded. Make sure all confined space workers are trained on the use and proper application of the ventilation system and all other confined space tools. Choose 8” diameter ventilation duct for use with this fan.

Reference 1910.146 OSHA; Permit-Required Confined Spaces and Confined Space Entry Regulation

What is a Hazardous Location?

All confined spaces should be considered as a “Hazardous Location” until proven otherwise. Federal OSHA refers to the National Electrical Code (NEC) as the “Bible” for reference information concerning hazardous locations. NEC defines a hazardous location as those areas “where fire or explosion hazards may exist due to flammable gases or vapors, flammable liquids, combustible dust, or ignitable fibers or flyings.”

Ventilation Tips

- 1) Proper ventilation procedures should be followed in accordance with all Federal, State, and local laws. For work in hazardous locations, follow ANSI/API 2015 and 2016 procedures.
- 2) Always test the confined space for hazardous gases and sufficient oxygen with a calibrated multi-gas monitor prior to ventilating the space. After ventilating for a sufficient amount of time, re-test the confined space before entering the space. Ventilation must remain in operation during occupancy.
- 3) Use a purge time chart, provided on Air Systems’ blowers, to calculate purge times prior to entering a confined space. Each 90° bend in a section of 8” duct will reduce flow approximately 10-15%. Each additional 25 ft section of duct will reduce flow by approximately 15%.
- 4) If toxic or combustible gases or low oxygen levels are encountered, increase ventilation purge times by 50% and retest the air quality prior to entry.
- 5) When ventilating a manhole or tank, always set the blower back from the opening a minimum of five (5) feet. This should prevent any hazardous gases purged from the confined space from being drawn back into the intake of the blower and forced back into the confined space.
- 6) Never block or restrict entry and egress to or from a confined space opening. Always use Air Systems’ Conductive Saddle Vent® System placed in the opening of the manhole or tank to allow continuous ventilation without restricting entry and egress to the opening.
- 7) With gases heavier than air, the ventilation duct should be placed at the bottom of the confined space allowing the blower’s air to push the gases out the top of the confined space.
- 8) Always use non-sparking tools in and around a hazardous work site
- 9) When using a Venturi style pneumatic air horn (also called an eductor) on a steel tank, make sure the aluminum base is not dragged along the surface of the steel tank; this may cause a spark where rust is forming. Always make certain the Venturi blower has been properly grounded (bonded) to the tank prior to ventilating and assure the tank is properly grounded.
- 10) Always have proper respiratory equipment for the ventilated work space and for emergency rescue.
- 11) The build-up of static electricity is more prevalent during cool dry conditions, typically below 50% relative humidity. Depending on the work environment, anti-static clothing and special static removal devices may be necessary to prevent ignition from static electrical discharge.



3WE66 (SVF-10EXP)

Occupational Health & Safety

Inline Axial Fan

for Hazardous Locations



Product Features:

10" Inline Explosion-Proof Axial Fan 3WE66 (SVF-10EXP)

- Explosion-proof Electric Motor: 1/3 HP, 115 VAC, 1-phase, 60 Hz. UL and CSA/CUS Approved motor for Class 1, Div. 1, Groups C and D, Class II, Groups E, F, and G environments
- Built-in on/off switch
- Automatic reset thermal overload
- Dual grounding lugs installed on steel housing
- Frame: All steel, powder coat red with rubber base feet
- Inlet/Exhaust flange made of molded polyethylene. Fits either 8" or 10" duct
- Power cord: 10ft. power cord without plug, user wired per NEC requirements
- Dimensions: 16"L x 16.75"H x 12.5"W
- Weight: 32 lbs.
- 72 dbA @ 3 ft.
- 1390 cfm, free air delivery
- 973 cfm, 25 ft duct, 1 - 90° bend

Inline Explosion-Proof Axial Fan Kit 2ELP1 (SVF10EXCUP)

Conductive Fan Kits Include:

- 1) Explosion-proof Fan, 3WE66
- 2) Conductive Saddle Vent®
- 3) 90° elbow for Saddle Vent®
- 4) 15 ft. duct
- 5) 6 ft. duct
- 6) Duct canister (holds 50ft. of duct)
- 7) Universal mount



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Description	ASI Part #	Grainger Item #
10" Explosion Proof Inline Axial Fan	SVF-10EXP	3WE66
Inline Explosion-proof Axial Fan Kit, includes Inline Explosion-proof Axial Fan, 6ft and 15ft Conductive Duct, Conductive Saddle Vent® and Accessories	SVF10EXCUP	2ELP1

For more information contact your Grainger Representative.

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