



SAFETY AND OPERATIONS INSTRUCTIONS FROM:

 **Space Ventilators**

**OWNER'S MANUAL
SAFETY INSTRUCTIONS**

Please read and keep these instructions with the fan.






MODEL: VAF3000P

For use in Class I, Groups A, B, C and D.

Purchase Date: _____ Serial No. _____

Dealer: _____

 **PINNACLE**
CLIMATE TECHNOLOGIES™

1 Industrial Blvd #101, Sauk Rapids, MN 56379 USA • Toll Free (800) 779-3267
Fax: 320-251-2922 • Web: www.schaeferventilation.com • Email: info@pinnacleclimate.com

PLEASE READ THIS INFORMATION CAREFULLY PRIOR TO
OPERATING EQUIPMENT

GENERAL SAFETY INFORMATION

These instructions are for your protection and convenience. Please read them carefully since failure to follow these precautions could result in injury or even death.

- Always use the VAF3000P in accordance with the required operation standards listed below.
- Never use combustible liquids or solvents to clean or flush any part this product.
- Never put the VAF3000P into standing water or allow water inside the motor.
- Never store the VAF3000P outdoors.
- Never allow the air intake screens to become plugged.
- Never put any object in the intake screen unless the unit is disconnected from the air supply line and the fan blade has stopped turning.
- Do not allow the unit to be used as a toy. Close attention is necessary when used by or near children.
- Keep hair, loose clothing, fingers and all parts of the body away from the intake screen. If the fan is not working properly because it has been dropped, damaged, left outdoors or submerged in water, contact Pinnacle Climate Technologies at (800) 779-3267.

OPERATION STANDARDS

FOR ALL APPLICATIONS

- **100 psi maximum**
- **Clean, dry, lubricated air supply required**
- **3/8" Type M Female quick connector (Fan connector: 3/8" Type M Male)**

FOR HAZARDOUS LOCATIONS

- CAUTION: Ground unit at lug on coupler plate.
- Air supply lines shall be made of electrically conductive material in accordance with the recommended practice on static electricity, NFPA 77, and/or any other applicable local code

- Your new VAF3000P comes to you completely assembled and ready to operate. Carefully inspect unit for any possible damage from transit.
- When using the VAF3000P, note the directional airflow indicator on the external shell. This is the way the air moves.
- Prior to connecting the VAF3000P to the air supply line, inspect the inlet and outlet screen and remove any debris that may restrict airflow movement.

WHEN USED WITH DUCTING

- **Do not install duct when fan is in operation**

FOR HAZARDOUS LOCATIONS

- Use only 'Static Conductive Hose' properly grounded. If connecting duct to duct, use only 'Static Conductive' couplers made of aluminum
- Place duct lip over duct adapter and secure firmly
- Note the direction of the airflow as indicated by the Arrow on the side of the fan

SPECIFICATIONS

DIMENSIONS

Pneumatic Motor	1.5 hp	Height:	21"	53.34 cm
RPM:	3000	Width:	14"	35.65 cm
CFM:	2000	Length	17"	43.18 cm
		Duct Adapter	12"	30.48 cm
		Weight:	28 lb.	12.75 kg

SAFETY SYMBOL



When you see this symbol, **CAUTION**, be aware that personal injury or property damage is possible. The hazard is explained in the text following the symbol.



CAUTION: Severe personal injury or death **COULD** occur if hazard is ignored.

AIR MOTOR PRECAUTIONS



CAUTION: The air motor is designed to be driven by compressed air. Under no circumstances should the air motor be driven by any other gases. The air motor must not be driven by fluids, particles, solids or any substance mixed with air, particularly combustible substances likely to cause explosions.



CAUTION: DO NOT USE KEROSENE OR OTHER COMBUSTIBLE SOLVENTS.



CAUTION: Foreign materials exiting the air motor can be hazardous. Solid or liquid materials exiting the unit can cause eye or skin damage. Keep away from air stream.



CAUTION: Keep face away from exhaust port. Eye protection is required.



CAUTION: Water, vapor, oil-based contaminants or other liquids must be filtered out.



CAUTION: Do not drive the air motor in excess of the recommended operating maximums below. Ambient temperature (including the moving airstream) should not exceed 55°C (131°F).

INTERNAL OPERATING MAXIMUMS

MOTOR SIZE	MAXIMUM RPM	MAXIMUM PRESSURE (PSI)	MAXIMUM TORQUE (lb./in.)	MAXIMUM AIR CONSUMPTION (CFM)
Pneumatic Motor	300	100	36	78



CAUTION: Do not allow the air motor to 'run free' at high speeds without a load. Excessive internal heat buildup will result in loss of internal clearance and rapid motor damage.

CFM RATINGS

FREE AIR	15' STRAIGHT DUCT	15' – (1) 90° BEND	25' STRAIGHT
2000 CFM	1700 CFM	1400 CFM	1600 CFM
25' – (1) 90° BEND	25' – (2) 90° BENDS	100' STRAIGHT BLOWING	100' STRAIGHT SUCTION
1250 CFM	1100 CFM	1000 CFM	1125 CFM



CAUTION: Always disconnect the unit from the air supply before servicing.

GENERAL TROUBLESHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION
Unit will not run.	<ul style="list-style-type: none"> • No air supply to unit • Faulty air supply line 	<ul style="list-style-type: none"> • Connect air supply • Perform maintenance and check line to air supply
Unit runs but fan makes loud scraping noise.	<ul style="list-style-type: none"> • Unit has been severely jolted causing fan to rub against housing • Unit has been severely jolted causing housing to deform 	<ul style="list-style-type: none"> • Remove motor and replace damaged motor mounts • Perform maintenance and check line to air supply
Unit runs but vibrates excessively.	<ul style="list-style-type: none"> • Severe jolt has bent motor shaft causing unit to be out of balance • Fan blade is damaged • Dirt build-up on one side of fan blade 	<ul style="list-style-type: none"> • Remove and replace motor. Replace fan blade as necessary • Replace fan blade • Clean fan blade
Unit runs but fan does not turn.	<ul style="list-style-type: none"> • Fan is jammed • Housing has been damaged and presses on the fan blade 	<ul style="list-style-type: none"> • Remove motor and replace damaged motor mounts • Replace fan blade if necessary and/or replace housing/unit as necessary
Unit runs but does not develop full power.	<ul style="list-style-type: none"> • Low air supply pressure • Low air supply cfm • Excessive duct length • Worn motor vanes 	<ul style="list-style-type: none"> • Supply 100 psi air • Increase size of compressor and/or size of supply lines to provide at least 71 cfm • Reduce duct length to recommended maximum • Rebuild motor

MOTOR TROUBLESHOOTING GUIDE

REASON	LOW TORQUE	LOW SPEED	WON'T RUN	RUNS HOT	RUNS GOOD, THEN SLOWS
Dirt, Foreign Material	X	X	X		
Internal Rust	X	X	X		
Misalignment	X	X	X	X	
Insufficient Air Pressure	X	X			
Air Line Too Small		X			X
Restricted Exhaust		X			
Poor Lubrication	X	X	X	X	
Jammed Machine	X	X	X		X
Compressor Too Small		X			X
Compressor Too Far From Unit		X			X

LUBRICATION

An automatic lubricator can be installed in the air line just ahead of the motor. The lubricator should be adjusted to feed one drop of oil per minute. Lubrication is necessary for all internal moving parts and rust prevention. Excessive moisture in the air line can cause rust formation in the motor and might also cause ice to form in the muffler due to the expansion of air through the motor. The moisture problem can be corrected by installing a moisture separator in the line and also by installing an after cooler between the compressor and air receiver. The use of a Filter Regulator Lubricator (FRL) will cover both of these requirements. USE DETERGENT SAE #10 AUTOMOTIVE ENGINE OIL.

SERVICING AIR MOTOR

If the motor is sluggish or inefficient, try flushing with recommended solvent. The recommended solvent for air motors and lubricated pumps is Gast Flushing Solvent, Part #AH255 or AH255A, Demkote 2X726 Safety Solvent, Inhibisol Safety Solvent or Dow Chemical Chlorothane.

To flush the unit, disconnect the air line from the coupler plate and remove the felt inside the muffler assembly. Add several teaspoons of solvent directly into the air motor fitting. Rotate the fan shaft by hand in both directions for a few minutes. Connect motor to an adjustable air supply. Slowly apply pressure until there is no trace of solvent in exhausted air system. Reinstall the felt insert and secure the muffler cap.



CAUTION: Foreign material exiting the air motor can be hazardous. Solid or liquid material exiting the unit can cause eye or skin damage. Keep away from air stream. Keep face away from exhaust port. Eye protection is required.



CAUTION: DO NOT USE KEROSENE OR OTHER COMBUSTIBLE SOLVENTS.



CAUTION: Flush unit in a well-ventilated area only.

Re-lubricate the motor by squirting a drop of oil in the chamber. If the vanes need replacing or foreign materials are present in motor chamber, an experienced mechanic may remove the end plate opposite the drive shaft end. **DO NOT PRY WITH A SCREWDRIVER** because it will dent the surface of the plate and body causing leaks. A puller tool should be used which will remove the end plate while maintaining the position of the shaft. New vanes should have the edge with the corners cut on an angle or the notched edge towards the bottom of the vane slot.

If motor requires service, it is highly recommended that the user remove the motor from the housing as per the instructions provided in this manual and return it to the factory for repair.

A service kit is available; however, it should only be installed by a qualified mechanic. The tolerances inside the air motor must be maintained to ensure top operating performance.

SHUTDOWN AND STORAGE PROCEDURE

1. Turn off air intake supply and remove plumbing.
2. Remove air motor from the connecting machinery.
3. Use clean, dry air at low pressure to 'flush out' condensates, such as water.
4. Re-lubricate the air motor with a squirt of oil in the chamber. Rotate the shaft by hand several times.
5. Plug or cap each port. The unit is now ready for storage.

REINSTALLATION PROCEDURES CONTINUED

Step Five: Stand unit on its base, once again with the motor shaft towards you. Use a 7/8" open end wrench to tighten the 90° hose fittings onto the brass hex nipples previously installed onto the motor through the motor housing. Be sure to coat threaded joints with Loctite #545 Pneumatic Seal or equivalent product to assure leak free installation of air hose fitting. Attach hose to the fittings by pushing onto ferrule until they snap-lock into place. Tug on hose gently. If hoses release, push more firmly into the ferrule until you hear it snap-lock into place.

NOTE: Orient the unit so the back of the motor is facing you. Reinstall the air hoses into the proper motor fittings.

Step Six: Test air connections by attaching the unit to air supply line. Inspect hose connections for leaks. If a leak is found, repeat sealing instructions outlined in Step Six.



CAUTION: Never touch the spinning motor shaft – severe personal injury will result.

Step Seven: Lay unit down with the motor shaft facing up. Install fan blade with the flat part of the shaft aligned with the flat guide on the fan hub. Place 3/8" flat washer on top of the fan hub before securing the nut on the shaft with a 9/16" open end wrench. Tighten until you see one thread exposed above the installed nylon nut. You may need to hold the blade by wedging it to prevent rotation during this procedure.



CAUTION: Never operate the unit with the fan blade installed without first installing the safety grill. Severe personal injury will result.

Step Eight: Install grill, duct ring and grounding stud ring to the front of the unit's housing. Assemble bolt with flat washer first, then the ground stud ring. This bolt assembly is then threaded through the grill and duct ring into the unit's housing. Repeat steps to install grill, duct ring and grounding stud to the rear of the unit's housing. You should use a 1/4" ratchet and a 5.5 mm socket for this procedure.



CAUTION: Ensure you reattach flat washer and grounding wire stud ring to ensure proper operation.

Step Nine: Connect completely reassembled fan to air supply line and perform a final inspection of the unit to ensure proper operation.

Step Ten: Ensure ground continuity with a multi meter. Test with one lead attached to the grounding stud located on the coupler plate, and complete the circuit by touching the secondary lead to the following points while noting meter response:

1. The rivet holding the right side of the safety label in place.
2. The upper left corner rivet holding serial plate in place.
3. Any coupler plate screw.
4. The front and rear grills. Test one of the bolts not connected to the ground wire.
5. Back of motor (long probe will be required to make contact).

NOTE: Some resistance may be present when testing various points. The objective of this test is to ensure that all wires removed are properly attached.



CAUTION: This unit is cULus listed for use in hazardous locations. The grounding system links metal components together. If you fail to properly reattach grounding stud rings, washers and bolts, static electric build-up can result. The cULus listing for this unit will also be null and void.