

INSTRUCTION MANUAL FRESH-AIR PUMP MODEL 8050501



Warning: Do not use extension cords longer than 100 ft (30 metres) or rated less than fifteen (15) amperes when operating this device. We recommend using a minimum 12-gauge grounded extension cord with a length not exceeding 100 feet (30 metres). Pump damage will occur and the pump's warranty will be voided if this practice is not followed.

This Manual provides detailed instructions, safety warnings and other information for users of MST's Fresh-Air Pump Model 8050501.

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GENERAL INFORMATION

The Fresh-Air Pump is designed to intake fresh, clean air from a non-contaminated atmosphere and supply this fresh air to a continuous flow supplied air respirator.

The clean air is filtered through a porous plastic intake muffler designed to protect the pump from dust and dirt particles. The outlet air supplied to the respirator is filtered through an activated charcoal filter designed to remove tastes and odors from the breathing air.

MST's Fresh-Air Pump is oil-less and has rotary carbon vanes. The pump does not produce carbon monoxide, oil vapors, oil mist or moisture, however it is extremely important that the atmosphere from which the air is drawn into the pump is clean and free of any carbon monoxide or other toxic gases or vapors. OSHA requires, per 29 CFR 1910.134, the carbon monoxide in the inlet air to be less than 10 ppm, and that this condition is assured at all times. Sometimes carbon monoxide monitoring may be required to warn a user, should the CO levels exceed the permissible level.

The Fresh-Air Pump will supply a maximum air flow rate of ten (10) SCFM of breathing air to one worker or a maximum supply pressure of fifteen (15) psig. The user is responsible for determining if their respirator will operate properly at these flows and pressures. **USE ONLY MSHA/NIOSH APPROVED RESPIRATORS THAT WILL OPERATE AT PRESSURES LESS THAN FIFTEEN (15) PSIG.**

WARNINGS

READ ALL INSTRUCTIONS IN THIS MANUAL BEFORE USING THIS FRESH-AIR PUMP MODEL 8050501.

FAILURE TO OPERATE THIS PUMP IN ACCORDANCE WITH THE INSTRUCTIONS CONTAINED IN THIS MANUAL AND ACCOMPANYING INFORMATION MAY RESULT IN DEATH OR SERIOUS INJURY TO THE RESPIRATOR USER.

DO NOT OPERATE THIS PUMP IN AN EXPLOSIVE OR CORROSIVE ATMOSPHERE.

DO NOT OPERATE THIS PUMP WHERE IT CAN BE EXPOSED TO ANY LIQUID OR DUSTY MATERIAL. THIS PUMP MUST BE PROTECTED FROM THE ELEMENTS IF USED OUTSIDE.

Locate the pump's inlet air muffler in a clean breathable air location at all times. THIS PUMP DOES NOT REMOVE TOXIC GASES OR OTHER CONTAMINANTS FROM THE INCOMING AIR BEING TRANSFERRED TO THE RESPIRATOR USER.

See the BREATHING AIR REQUIREMENTS section of this manual for specific details on breathing air quality. THIS PUMP DOES NOT SUPPLY OXYGEN.

This pump will supply a maximum air flow rate of ten (10) SCFM or a maximum supply pressure of fifteen (15) psig. USE ONLY MSHA/NIOSH APPROVED RESPIRATORS THAT WILL OPERATE AT PRESSURES LESS THAN (15) PSIG.

Be sure that the pump's outlet pressure, measured by the pressure gauge on the pump, is maintained above the minimum pressure setting required by the Respirator manufacturer. REFER TO YOUR RESPIRATOR MANUAL FOR CORRECT PRESSURE REQUIREMENTS, PERMISSIBLE HOSE LENGTHS AND FITTING TYPES. FAILURE TO COMPLY WITH THE RESPIRATOR MANUFACTURER'S REQUIREMENTS WILL VOID THE MSHA/NIOSH APPROVAL(S) AND COULD RESULT IN DEATH OR SEVERE INJURY.

Questions regarding whether or not your Respirator is compatible with this pump can be directed to MST's Customer Service Department at 1-800-542-6646 or 1-419-542-6645.

SUPPLIED-AIR RESPIRATORS USED WITH THIS PUMP MUST NOT BE WORN IN ANY ATMOSPHERE IMMEDIATELY DANGEROUS TO LIFE OR HEALTH OR FROM WHICH THE WEARER CANNOT ESCAPE WITHOUT THE USE OF THE RESPIRATOR.

When connecting your respirator to this device, use only the air supply hose and couplers required by the respirator manufacturer and approved by MSHA/NIOSH.

Use of non-approved hose or couplers will void the respirator's MSHA/NIOSH Approval and could reduce the air flow to the respirator, resulting in possible death or serious injury to the Respirator wearer.

If your hose and couplers are not compatible with the coupler supplied on this pump, you may change the coupler on this pump to provide the proper connection. Contact the factory with any questions regarding the type of fittings that can be used with this pump.

DO NOT modify or alter this pump in any manner. Use only approved MST replacement parts and components. Failure to use approved MST components and replacement parts invalidates all MST warranties, and may result in death or serious injury to the respirator wearer.

If you have any questions concerning the use of this pump or your respirator, or you are not sure the inlet muffler is in a breathable location, ask your supervisor.

All instructions for the use and care of this product must be supplied to you by your employer as recommended by the manufacturer and as required by Federal Law (29 CFR 1910.134).

For technical assistance or additional copies of this manual, call or write:

MST, Inc.
P.O. Box 87
Hicksville, OH 43526-0087
1-800-542-6646
1-419-542-6645
Fax: 1-419-542-6475
Email: modsafe@bright.net
Web Site: www.modsafe.com

SPECIFICATIONS

PUMP DATA:

Pump Design:	Rotary Carbon Vane (4 Vanes)
Maximum Pressure:	15 psig (103 kPa)
Air Flow (Free):	10 SCFM (283 lpm)
Inlet Filter:	Porous Plastic
Outlet Filter:	Activated Charcoal

DIMENSIONS:

Width:	9" (22.9 cm)
Length:	16" (40.6 cm)
Height:	12" (30.5 cm)

Weight:	53 lbs. (approx.) (24 kg)
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ELECTRIC MOTOR DATA:

Voltage:	100-115/208-230 VAC
Phase:	Single
Cycles:	50/60 Hz
Horsepower:	3/4
RPM	1725
Service Factor	1.00
Amperes:	12.2 @ 115 V
Sound Level:	66 dB(A)@ 10 psi
Protection:	Internal Thermal Overload
Approvals:	CSA (Canadian Standards Association) Approved

See Motor Rating Plate on Motor for Additional Information.

WARNING: PROPER MOTOR SELECTION AND WIRING (IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRIC CODES) IS THE RESPONSIBILITY OF THE USER.

BREATHING AIR REQUIREMENTS

AIR QUALITY

The Fresh-Air pump's inlet muffler must be located in a clean breathable air location at all times.

The breathable air drawn into the inlet muffler must meet at least the requirements for Type 1 gaseous air as described in the Compressed Gas Association Commodity Specification G-7.1 (Grade D or higher) as specified by Federal Law (29 CFR 1910.134).

The requirements of Grade D breathable air include:

Oxygen	19.5-23.0%
Hydrocarbons (condensed) in mg/m ³ of gas	5 mg/m ³ maximum
Carbon Monoxide	10 ppm maximum
Carbon Dioxide	1,000 ppm maximum
No toxic contaminants at levels which would make the air unsafe to breathe.	

Refer to the CGA Commodity Specification G-7.1 for complete details. This publication is available from:

The Compressed Gas Association
500 Fifth Avenue
New York, NY 10036

ASSEMBLING THE FRESH-AIR PUMP

Remove the cardboard shipping sleeve around the pump and the gauge box. Lift the pump and attached plywood base from the box and remove pump from plywood base.

MST recommends saving all packaging materials in the event that the pump must be shipped in the future.

Remove the pressure gauge from its box and assemble it to the gauge port located on top of the pump's filter manifold as shown in Figure 1. Tighten the gauge using a suitable wrench. Teflon tape is recommended to prevent excessive tightening that might be required to seal the gauge threads. The gauge should be rotated such that the pressure scale can be easily read by the operator.



FIGURE 1

Unscrew the pump's aluminum filter can and check that the filter element is screwed into the filter manifold properly. **HAND TIGHTEN ONLY.** Excessive force may damage the filter element or threads. Replace the filter can and tighten securely making sure the filter can seals on the filter can gasket (see Figure 2).



FIGURE 2

Check to make sure that the pressure relief valve, filter can, pressure gauge and outlet coupling are assembled tightly to the pump to avoid air leakage.

OPERATING INSTRUCTIONS

WARNING: THE RESPIRATOR USER MUST NOT ENTER THE CONTAMINATED WORK AREA UNTIL ALL OF THE FOLLOWING STEPS HAVE BEEN COMPLETED.

Analyze the atmosphere at the location of the air inlet and the pump to be sure the pump will not be operating in a contaminated or an explosive atmosphere.

Plug the pump into a 115 VAC grounded electrical outlet fused at 15 amps. The pump's motor is equipped with a toggle switch and 10 foot grounded cord with a standard three-prong plug. You may use up to 100 feet of 15 amp, 3-wire grounded extension cord to reach your electrical outlet. MST recommends using a minimum 12 gauge grounded extension cord not to exceed 100 feet in length. Avoid excessive lengths of extension cord, especially if running the pump continuously.

The pump will operate sitting on its four rubber mounts. It does not need to be bolted down, however if desired, the pump may be mounted on a wall or ceiling as long as the shaft center line is horizontal.

Make sure the pump's inlet muffler is located in a clean, uncontaminated location where breathable air is assured at all times (see Figure 3).

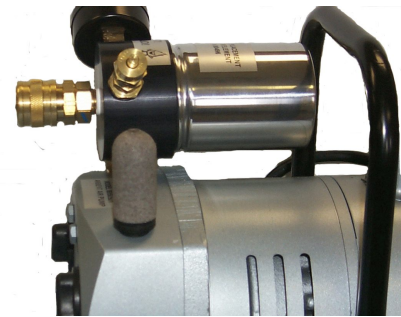


FIGURE 3

If the inlet muffler cannot be located in a clean breathable location, extension hoses are available to allow the inlet muffler to reach a clean breathable location. See the instructions supplied with the extension hose for assembly instructions. You may connect up to three (3) extension hoses together with the original inlet hose, to achieve a maximum distance of one hundred (100) feet. For greater distances, install rigid, smooth bore, plastic piping having an internal diameter of not less the 1.5 inches. Use good engineering practices to ensure that the inlet piping system does not affect pump performance.

Assemble your respirator according to the manufacturer's instructions . Be sure pump's outlet pressure, measured at the pressure gauge, is greater than the minimum MSHA/NIOSH approved pressure required to operate the respirator. This pressure should be measured when all components of the respirator (hoses, breathing tubes, etc.) are connected to the pump and the pump is operating.

The respirator's approved pressure requirements will be located in the respirator's instruction manual and/or on labels attached to the respirator.

If you have any questions as to whether or not your respirator is compatible with this pump, contact your respirator manufacturer or MST at 1-800-542-6646 or 1-419-542-6645 for assistance.

Should the air pressure require adjustment, loosen the locknut on the pressure relief valve and adjust the top sleeve to achieve the proper pressure (see Figure 4). Clockwise will increase the pressure, counter-clockwise will decrease the pressure. Retighten the locking nut when adjustment is complete to prevent inadvertent changes to the adjustment. The pressure relief valve may vent in order to prevent the pump from exceeding the recommended pressure. This is normal as long as the pressure on the gauge is correct for the respirator you are using.



FIGURE 4

DO NOT ADJUST THE PRESSURE RELIEF VALVE TO ALLOW THE PRESSURE TO EXCEED 15 PSIG MAXIMUM. PUMP DAMAGE WILL OCCUR AND THE WARRANTY ON THE PUMP WILL BE VOIDED IF THE PUMP IS ALLOWED TO OPERATE ABOVE 15 PSIG PRESSURE.

Allow the air to purge through the respirator and hose assembly for a few minutes to eliminate any odors or tastes in the respirator assembly. Don the respirator and re-check the outlet pressure gauge prior to entering the contaminated work area.

When finished working, exit the work area wearing the respirator with the air still flowing. Once outside the contaminated area, remove the respirator, turn the pump off, then disconnect the air supply hose using the quick-disconnect couplers.

Refer to the respirator's instruction manual for proper inspection, maintenance and storage procedures for the respirator.

MAINTENANCE INSTRUCTIONS

The Fresh-Air Pump is an electrically driven rotary air pump with four carbon vanes. The vanes self-adjust and should last between 5,000 and 15,000 hours depending on the application. Remember that the air pump is designed for pumping clean dry air, being built of cast iron and steel. Protect it against the entrance of dirt and excessive moisture and you should receive years of trouble free service.

WARNING: DO NOT PUMP FLAMMABLE OR EXPLOSIVE GASES OR OPERATE THE UNIT IN AN ATMOSPHERE CONTAINING THEM. DO NOT ALLOW CORROSIVE GASES OR PARTICULATE MATTER TO ENTER UNIT. WATER VAPOR, OIL BASED CONTAMINATES OR OTHER LIQUIDS MUST NOT BE ALLOWED TO ENTER UNIT. DEATH OR SERIOUS INJURY CAN OCCUR IF THESE WARNINGS ARE NOT ADHERED TO.

THE FRESH-AIR PUMP BECOMES VERY HOT DURING CONTINUOUS OPERATION AND CAN CAUSE BURNS. TURN PUMP OFF, DISCONNECT FROM ELECTRICAL OUTLET AND ALLOW TO COOL BEFORE PERFORMING ANY MAINTENANCE ON THE PUMP.

Regular inspection can prevent unnecessary damage and repairs. Intake muffler and outlet filters require periodic inspection and replacement. Initial inspection is suggested at 100 hours of operation, then the user should determine frequency. Keeping filters clean can prevent most problems. Dirty filters decrease unit performance and can decrease unit service life. **WARNING: FAILURE TO PERIODICALLY CHANGE FILTERS CAN RESULT IN THE BREATHING AIR BECOMING CONTAMINATED AND UNFIT TO BREATHE. UNFIT BREATHING AIR CAN CAUSE SERIOUS INJURY OR DEATH.**

REPLACE THE INLET MUFFLER AND OUTLET FILTER REGULARLY

Dirty filters may inhibit air flow to the respirator and cause the motor to overload and decrease vane life.

Replace the outlet filter (P/N 80496) at least once every 200 hours of operation or sooner if necessary.

Replace the inlet muffler (P/N 80515) at least once every 500 hours of operation or sooner if necessary.

WARNING: INLET MUFFLER AND OUTLET FILTER SHOULD BE REPLACED. DO NOT ATTEMPT TO CLEAN THESE FILTERS. SOLVENTS AND CLEANING SOLUTIONS CAN CONTAMINATE BREATHING AIR AND DEATH OR SERIOUS INJURY COULD RESULT.

FLUSH PUMP IF NECESSARY

Should excessive dirt, sand, foreign particles, moisture or oil be permitted to enter the pump, the carbon vanes will become sluggish and the pump's performance will deteriorate. This will result in decreased outlet pressure or failure of the pump to operate.

If the pump remains idle in a humid environment for an extensive period of time, rust film may build up in the pump's compression chamber and rotor slots. This will result in decreased outlet pressure or failure of the pump to operate.

If the above occurs, the pump should be flushed with the following recommended solvent:

Loctite ODC - Free Cleaner & Degreaser (Loctite P/N 22355).

WARNING: NEVER USE KEROSENE OR OTHER COMBUSTIBLE LIQUIDS OR VAPORS WITH THIS PUMP. THEIR USE MAY RESULT IN AN EXPLOSION WHICH MAY CAUSE INJURY OR DEATH. THE VAPORS MAY BE TOXIC, AND IF NOT COMPLETELY REMOVED, MAY CONTAMINATE THE BREATHING AIR AND RESULT IN DEATH OR SERIOUS INJURY.

Flushing the pump requires (2) 3/8" NPT pipe nipples at least 4" long.

Remove all muffler and filter elements and remove inlet and outlet end cap assemblies from pump housing (refer to Figure 5 to correctly identify end cap assemblies).

Insert 3/8" pipe nipples through openings in Muffler box and thread into ports where end cap assemblies are threaded. **HAND TIGHTEN ONLY.**

WARNING: WEAR EYE PROTECTION AND FLUSH PUMP IN A WELL VENTILATED AREA.

With pump running, spray the Cleaner & Degreaser directly into inlet port for approximately 5-10 seconds. While adding the Cleaner & Degreaser, listen for changes in motor sounds in unit.

If motor sounds smooth out, plug inlet port for 20-30 seconds and then release vacuum. Repeat this procedure three or four times, each time spraying the Cleaner & Degreaser into pump for 5-10 seconds.

When complete, run the pump for several minutes until all traces of the Cleaner & Degreaser are gone and there are no noticeable odors. Reassemble pump and install new outlet filter.

WARNING: RUN THE PUMP FOR A SUFFICIENT TIME TO PURGE ALL TRACES OF THE CLEANER & DEGREASER BEFORE REPLACING FILTERS, RECONNECTING THE AIR SUPPLY HOSE AND USING THE RESPIRATOR.

If motor sounds do not improve, install Vane Kit (P/N 80522) per Vane Kit installation instructions.

NOTE: NEVER LUBRICATE THIS OIL-LESS PUMP. THE MOTOR BEARINGS ARE GREASE PACKED AND SEALED. THEY REQUIRE NO FURTHER LUBRICATION.

VANE KIT INSTALLATION

Each Vane Kit contains all of the items normally necessary to replace the vanes and bring the pump back into proper operating condition. Follow these steps to install Vane Kit:

Disassembly (refer to Figure 5):

WARNING: DISCONNECT UNIT FROM ELECTRICAL AND VENT ALL AIR LINES TO PUMP TO REMOVE PRESSURE BEFORE SERVICING. FAILURE TO DO SO CAN RESULT IN DEATH OR SEVERE INJURY.

Remove end cap assemblies 10 from front muffler box.

Carefully remove five (5) bolts that hold muffler box in place (be careful not to damage bolt gaskets, as they may not require replacing).

Tap box with a small hammer to break it loose. **Do Not Pry with a Screwdriver**, as muffler box gasket will be damaged.

Remove six (6) bolts holding end plate to body

Remove end plate and four (4) vanes. **Note Direction of Bevel Edge on Vanes.** When reinstalling or replacing, be careful to face vane bevels in the proper direction (see exploded view).

Clean out body and rotor slots.

Check for scoring on end plate and body. **If severe scoring is visible or bearing needs to be replaced, contact your local distributor or the factory for service.**

NOTE: DO NOT REMOVE ROTOR OR LOOSEN ANY ELECTRIC MOTOR THROUGH BOLTS.

Re-assembly:

Insert vanes (noting direction of bevel edge).

Reinstall endplate

Torque bolts holding endplate to body to 75-100 in.-lbs.

Verify gasket is not damaged before reinstalling muffler box.

Torque muffler box bolts to 75-100 in.-lbs.

Before putting unit back into service, ensure that any external accessories, such as relief valve, gauge, outlet filter manifold, etc., have not been damaged.

Run the pump for several minutes before connecting respirator hose and respirator to pump.

TROUBLE SHOOTING INFORMATION

If your Fresh-Air pump is not working satisfactorily, please follow the trouble shooting steps below:

SYMPTOM: Pump Fails to Start or Hums

Turn pump switch off and disconnect from the power source.

Check for correct electrical current as shown on the motor plate and in the Specification Chart on page 3 of this manual.

The pump is equipped with a thermal overload protector that turns the current off when subjected to electrical overloads. Check to be sure that the circuit is not overloaded by the pump and other electrical equipment.

Wait 15 minutes and restart

SYMPTOM: Outlet Pressure Too Low

Be sure you know the proper pressure range for the respirator - see the respirator's instruction manual.

Be sure the respirator and air supply hose are connected when the gauge reading is taken.

Check to see that the gauge is functioning properly. Replace the gauge if broken or malfunctioning.

Check to see that the outlet filter can is seated firmly into the filter housing's gasket so that no air can escape. Replace can and/or gasket if damaged or worn.

Check to see that no air is escaping from the pressure relief valve. Re-adjust the pressure relief valve if necessary.

Check that both the inlet muffler (P/N 80515) and the outlet filter (P/N 80496) are clean and replace if necessary. Dirty filters restrict air flow.

Flush the pump with Loctite ODC - Free Cleaner & Degreaser (Loctite P/N 22355) to remove excessive dirt, sand, particles, moisture or oil in the rotor assembly. See the Maintenance Section on Page 11 of this manual for the procedure on flushing the pump.

When the parts are reassembled, attach the respirator and turn on the pump, monitoring the outlet pressure.

SYMPTOM: Outlet Pressure Too High

The pressure adjustment valve is set too high - reset to a lower pressure. Be sure the outlet pressure remains in the proper range for the respirator as specified by the respirator manufacturer - see the respirator's instruction manual.

Check the respirator's air supply hose for kinks.

SYMPTOM: Pump Overheating

160 F - 195 F is normal output air temperature when the pump is continuously running. This heat is dissipated as it travels through the respirator's air supply hose until it reaches ambient air temperature.

Make sure that both the inlet muffler and outlet filter are clean. Replace if necessary.

The pressure relief valve is set too high - reset to a lower pressure. Be sure the outlet pressure remains in the proper range for the respirator as specified by the respirator manufacturer - see the respirator's instruction manual.

Flush the pump with Loctite ODC - Free Cleaner & Degreaser (Loctite P/N 22355) to remove excess dirt, sand, particles, moisture or oil in the rotor assembly. See the Maintenance Section on page 11 of this manual for proper directions on flushing the pump. When parts are reassembled, attach the respirator and turn the pump on, monitoring its performance and overheating.

The electrical circuit to which the pump is connected is overloaded. Check the amperage load of the circuit and disconnect other electrical equipment, if necessary, from the circuit.

SYMPTOM: Outlet Air Temperature Too Warm

Be sure that the air supply hose is laid out (not coiled) to permit excess heat to

dissipate from the hose.

Keep the air supply hose out of direct sunlight and off warm or hot surfaces.

Put a coiled section of the air supply hose in the bottom of a large container. Fill the container with water and ice and cover with a lid. For best results, locate the container as close to the worker as possible.

SYMPTOM: Outlet Air Temperature Too Cold

Let the pump warm up approximately 15 minutes before using.

Coil the first 25-50 feet of air supply hose closest to the pump.
Keep the air supply hose off cold surfaces.

SYMPTOM: Moisture In Air Supply Hose Line

Locate the air inlet muffler in a dry, clean air location, where breathable air can be assured at all times.

With the air supply hose connected to the pump and a suitable quick-connect plug installed in the respirator end of the supply hose (do not connect the respirator), turn the pump on and run for approximately 15 minutes to purge the hose of excessive moisture.

IF THESE STEPS FAIL TO RESOLVE THE PROBLEM, CONTACT YOUR MST DISTRIBUTOR, OR MST'S CUSTOMER SERVICE DEPARTMENT AT 1-800-542-6646 OR 1-419-542-6645.

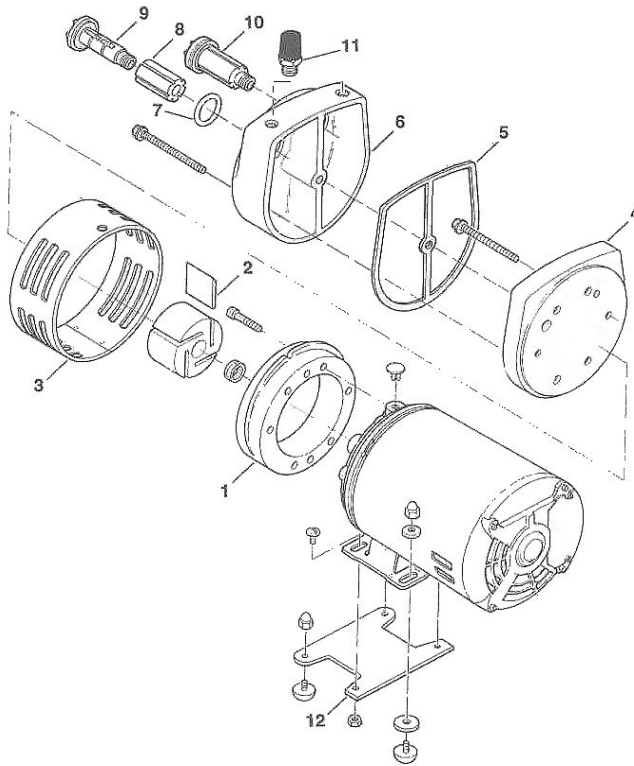


FIGURE 5

REPLACEMENT PARTS LISTING

REF NO.	DESCRIPTION	QTY	PART NO.
1	Pump Body	1	AK518
* 2	Vane	4	AK513
3	Shroud	1	AK511
4	End Plate	1	AK514
* 5	Gasket	1	AK522
6	Muffler Box	1	AK520
* 7	O-Ring	2	80531
* 8	Felt Filter	2	80530
9	Endcap	2	80532
10	End Cap Assembly	2	8053201
11	Muffler	1	80515
12	Foot Support	1	AE241

PARTS NOT SHOWN

DESCRIPTION	QTY	PART NO.
Handle	1	AF555
Outlet Filter Manifold	1	80513
Outlet Filter Can	1	80519
Can Gasket	1	80520
Pressure Relief Valve	1	80507
Pressure Gauge	1	80508
3/8" Q.D. Coupling	1	80321
Power Cord (10 Ft.)	1	80521
Outlet Filter	1	80496
3/8" Hex Nipple	1	S608-005
3/8" x 1/4" Hex Bushing	1	S638-007
Vane Replacement Kit	1	80522

* Parts included in Vane Replacement Kit

PUMP WARRANTY

MST, Inc. warrants to the original purchaser that the Fresh-Air Pump will be free of defects in materials and workmanship under normal use and service for a period of one (1) year from the date of purchase. MST's obligation under this warranty is limited to repairing or replacing, at its option, articles that are returned within the warranty period and that are, after examination, shown to MST's satisfaction to be defective, subject to the following limitations:

- a) Fresh-Air Pump must be returned to MST, Inc. with shipping charges prepaid.
- b) Fresh-Air Pump must not be altered from its original factory configuration.
- c) Fresh-Air Pump must not have been misused, subjected to negligent use, or damaged in transport.
- d) The date of purchase is within the one year warranty period (a copy of the purchaser's original invoice showing the date of purchase is required to validate warranty coverage).

In no event shall MST, Inc. be responsible for damages for loss of use or other indirect, incidental, consequential or special costs, expenses or damages incurred by the purchaser, notwithstanding that MST has been advised of the possibility of such damages.

ANY IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE (1) YEAR FROM THE DATE OF PURCHASE OF THIS PRODUCT.

TO RETURN GOODS: Written permission must be obtained before returning any material for any reason whatsoever. Material returned for credit will be subjected to factory inspection. In-warranty product of current design, will be subjected to a restocking charge. All material must be shipped with transportation and insurance charges prepaid. MST will issue a Customer Return Authorization Number (CRA#) to track the incoming package at MST. The CRA# must be noted on the shipping label and all paperwork accompanying return.

Products which are obsolete or made to special order are not returnable.

Warranty information can be obtained from, and defective articles should be sent, insured for their replacement value and shipping charges prepaid to:

MST, Inc.
11388 Breininger Road
P.O. Box 87
Hicksville, OH 43526-0087
Toll-Free: 1-800-542-6646
Reg. Phone: 1-419-542-6645