

OWNER'S MANUAL





General Use Criteria

- Use only clean, dry air. If moisture is present please use a liquid separator.
- Do not use flammable, explosive gases or atmosphere that contains such gases with standard motors/blowers. It is required that you consult Atlantic Blowers for explosion proof motors/blowers.
- Ambient temperatures must be between 0°C – 40°C (32° F – 104°F). For higher temperatures please consult factory.
- Protect unit from contaminants and moisture.
- Protect all surrounding items from exhausted air, as it can be very hot. It is strongly recommended that the first 5'-8' of piping be metal.
- Air particles, water vapor, oil based contaminants or other liquids, can be harmful to the blower and may cause over-heating. The use of an air-filter, relief valve, and pressure gauge are highly recommended in conjunction with our blowers.
- When using the blower at a high altitude or high temperatures, please consult with Atlantic Blowers prior to use.

Safety Notice

To ensure safe operation, we have provided many important safety guidelines in this manual for the Atlantic Regenerative Blower. Please read this instruction manual carefully, and pay particular attention to instructions with the following signs:

DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING: Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury



1 Installation

1-1 Installation

Install the blower on a level, stable operating surface and use vibration isolation pads to reduce noise and vibration.

1. Correct installation is the customer's responsibility.
2. Recommended piping should be, *at minimum*, the same size as the inlet and outlet ports.
3. Elbows increase friction. Minimizing the amount of elbows in the piping run will decrease friction loss.
4. Pressure or relief valves should be installed in a "T" that is at least one (1) pipe size larger than the port diameter.
5. Exhaust air temperature increases significantly above 65" of water column. Discharged air is typically too hot for most plastic piping. Therefore, metal piping is recommended for at least the first five (5') to eight (8') feet from the blower on the discharge side. In addition, this piping **MUST** be guarded and marked "DANGER-HOT-DO NOT TOUCH."
6. Install the blower in a location protected from the elements, or use an enclosure to protect the unit.

1-2 Rotation

From the motor side of the blower, verify the blower is rotating in the direction indicated by the arrow on the motor. (The motor side is marked with an arrow on most models.) Proper rotation can also be checked by the air flow at the inlet and outlet ports. On blowers powered by a 3-phase motor, change the connection of any two (2) wires to reverse blower rotation.



1-3 Plumbing

Remove any foreign material (burrs, chips, welding drops, slag, pipe cuttings, excess sealant, sand, lime, etc.) from plumbing.

Verify the motor is securely mounted and has proper impeller rotation before connecting to plumbing. The inlet and outlet ports are not designed to support the plumbing without proper structural reinforcement. Remove plastic safety plugs from the inlet and outlet ports and connect the plumbing with properly sized fittings.

Use a relief valve to discharge excess air beyond the preset level on pressure applications. Use a vacuum relief valve to draw in excess air when preset vacuum level is achieved. This will greatly reduce the possibility of over-heating.

Install an intake filter to prevent foreign material from entering the blower. In applications where there is high humidity or liquids being used in the process, install a moisture separator with a drain valve.

1-4 Accessories

Install a filter monitor gauge to monitor the pressure/vacuum differential through the filter element. As filters become clogged, performance and efficiency will be reduced. Filters should be checked periodically and replaced when necessary. The recommended check valves provide minimal pressure drop, positive sealing, and are resistant to the high discharge temperatures of the blowers. (Refer to Atlantic Regenerative Blower Check Valves List)

1-5 Motor Control

It is your responsibility to contact a qualified electrician and ensure that the electrical installation is adequate and in compliance with all national and local electrical codes.

Select fuses, motor protective switches, or thermal protective switches to provide desired protection. Fuses act as short circuit protectors for the motor, not as protection against overloading. Incoming line fuses must be able to withstand the motor's starting current. Motor starters with thermal magnetic overload or circuit breakers protect motor from overload or reduced voltage conditions. Motors without automatic restart require thermal protection, magnetic or over-current cutout to prevent motor overloading from single phasing in a 3-phase circuit, high starting frequency, or locked blower.

1-6 Electrical Connection



- Failure to follow these instructions can result in death, fire or electrical shock.
- Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified/certified electrician.
- If repairing the cord or plug, do not connect the ground wire (green or green with yellow stripes) to either terminal.
- Check the condition of the power supply wires.
- Do not permanently connect this product to wiring that is in poor condition or that is inadequately sized for the requirements of this blower.



atlantic blowers

- This product must be properly grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current.
- If the grounding instructions are not completely understood, or if you are not sure whether the product is properly grounded, check with a qualified electrician or serviceman.

2 Operation



Injury Hazard

- Failure to follow these instructions can result in burns, eye injury or other serious injury.
- Install proper safety guards as needed to prevent any close contact with blower suction area.
- Keep fingers and objects away from openings and rotating parts.
- Blower surfaces become very hot during operation. Allow these surfaces to cool before handling.
- Wear proper eye protection. Air stream from product may contain solid or liquid material that can result in eye or skin damage.
- Wear hearing protection. Sound level from some models may exceed 81 dBA.
- It is your responsibility to operate this product at recommended pressures or vacuum duties and room ambient temperatures.

Do not throttle discharge or suction pipe to reduce capacity. Throttle will increase differential pressure causing increasing power absorption and working temperatures.

Start Up

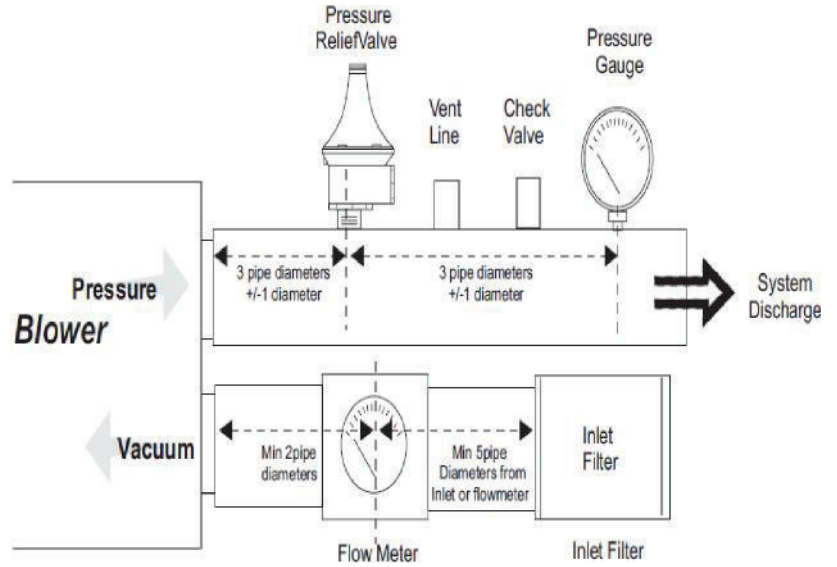
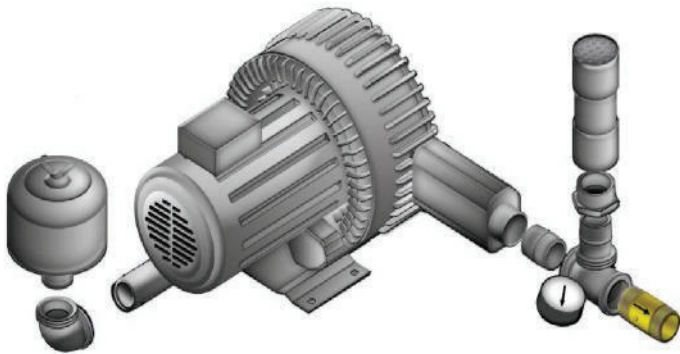
Operate blower for an hour and then check:

1. **Ambient temperature** – Increased room temperatures may require stronger ventilation especially for larger blowers. Room temperature should not exceed 100°F.
2. **Pressure and vacuum valves** – Adjust relief valve pressure or vacuum setting, if needed.
3. **Motor current** – Check that supply current matches recommended current rating on blower nameplate.
4. **Electrical overload cutout** – Check that current matches rating on blower nameplate.

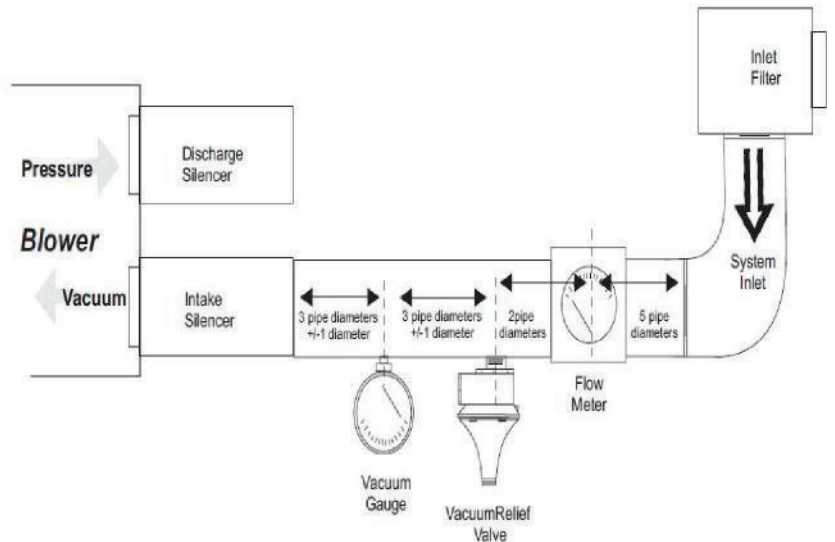
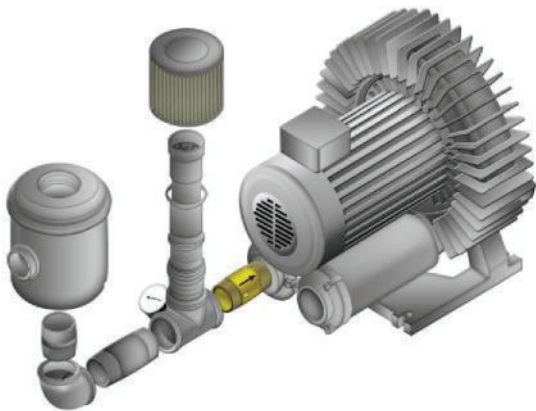
If motor fails to start or slows down significantly under load, shut off and disconnect from power supply immediately. Check that the voltage is correct for the motor and that the motor is turning in the proper direction.



Standard Installation Layout . Pressure Application



Standard Installation Layout . Vacuum Application



3 Maintenance



- Failure to follow these instructions can result in death, fire or electrical shock
- Disconnect electrical power supply cord before performing maintenance on the blower.
- If product is hard wired into system, disconnect electrical power at the circuit breaker or fuse box before performing maintenance on the blower.

! WARNING

Injury Hazard

- Failure to follow these instructions can result in burns, eye injury or other serious injury.
- Blower surfaces become very hot during operation. Allow blower surfaces to cool before handling.
- Wear proper eye protection. Air stream from product may contain solid or liquid material that can result in eye or skin damage.
- It is the customer's responsibility to regularly inspect and make necessary repairs to the blower in order to maintain proper operation. Make sure that the pressure and vacuum are released from the product before beginning any maintenance work.

Preventive Maintenance

- After the first 500 hours of operation, the following items need to be checked: >
 - Filter elements
 - > Noise absorbing foam used in muffler
 - > Clean motor and blower
- Replace filter elements as needed. Mufflers should be checked on a monthly basis.

Bearing Maintenance

To lubricate the bearings, the roller contact bearings and the adjacent bearing housing should have the used grease removed and replaced with fresh grease. About 50% of the roller balls should be filled. No more than 65% of the adjacent bearing housing should be filled. Sealed bearings should be replaced within the listed conditions below with new bearings or as conditions warrant.

Hours of Service Per Year	Relubrication Intervals
5,000	3 years
Continual Normal Services	1 year
Seasonal Service (motor idle for 6+ months)	1 year at beginning of season
Continuous-high ambient, dirty or moist applications	6 months



Bearing Types

A variety of bearings and lubricants are used in all Atlantic Regenerative Blowers. A summary of data is included in the Bearing Specification Table. Greasable bearings are supplied with a sufficient amount of lubricant from our factory to permit initial operation. The frequency of replacing the grease depends upon the conditions, application and amount of use.

Grease Types

Atlantic Regenerative Blowers utilize proprietary lubricants. These lubricants are available from Esso or Exxon. You can check with your local supplier for a recommended equivalent. (High temperature resistance and high speed: NLGI N3 Grade). Lubricants of different manufacturers should not be inter-mixed. If changing lubricant types, the bearing and housing should be thoroughly cleaned to remove all previous lubricants before adding grease from a new supplier.

Bearing Specification (Recommendable Bearing: NSK C3 Grade)

Single Stage			Double Stage		
Item	Front	Rear	Item	Front	Rear
AB-70/AB-71	6202zz	6201zz	AB102/AB-102/1	6203zz	6202zz
AB-80/AB-81			AB-202/AB-202/1		
AB-90/AB-91			AB-302/AB-302/1		
AB-100/101	6203zz	6202zz	AB-402/AB-402/1	6204zz	6204zz
AB-200/201	6204zz	6203zz	AB-502		
AB-300/301	6205zz	6204zz	AB-602	6205zz	6205zz
AB-400/401			AB-702		
AB-500	6206zz	6205zz	AB-802	6206zz	6205zz
AB-600			AB-902		6207zz
AB-700			AB-1002		
AB-800	6207zz	6207zz	AB-1102	6207z	6209z
AB-900			AB-1202		
AB-1000			AB-1302		
AB-1200	6308z	6209z	AB-1402		
AB-1300			AB-1502		
			AB-1602		



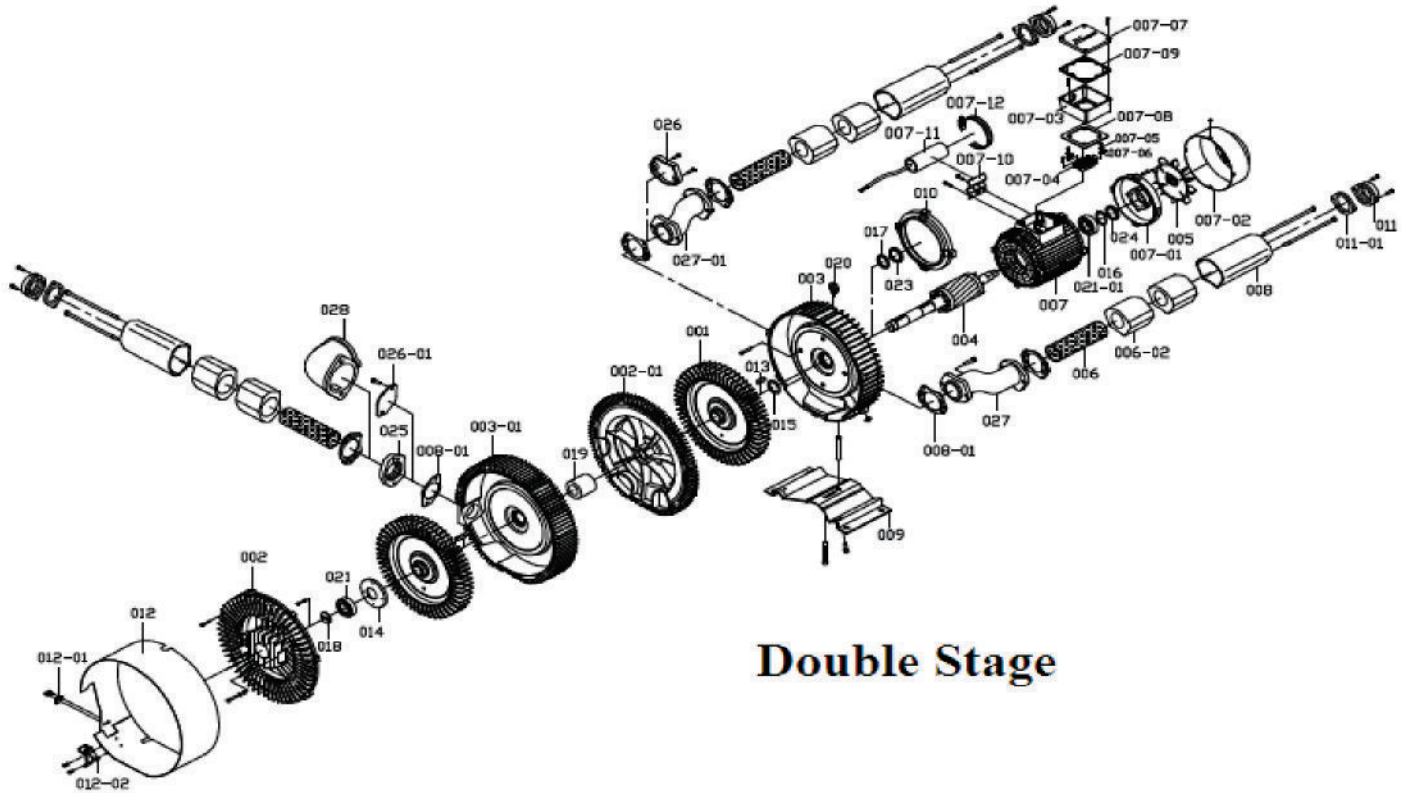
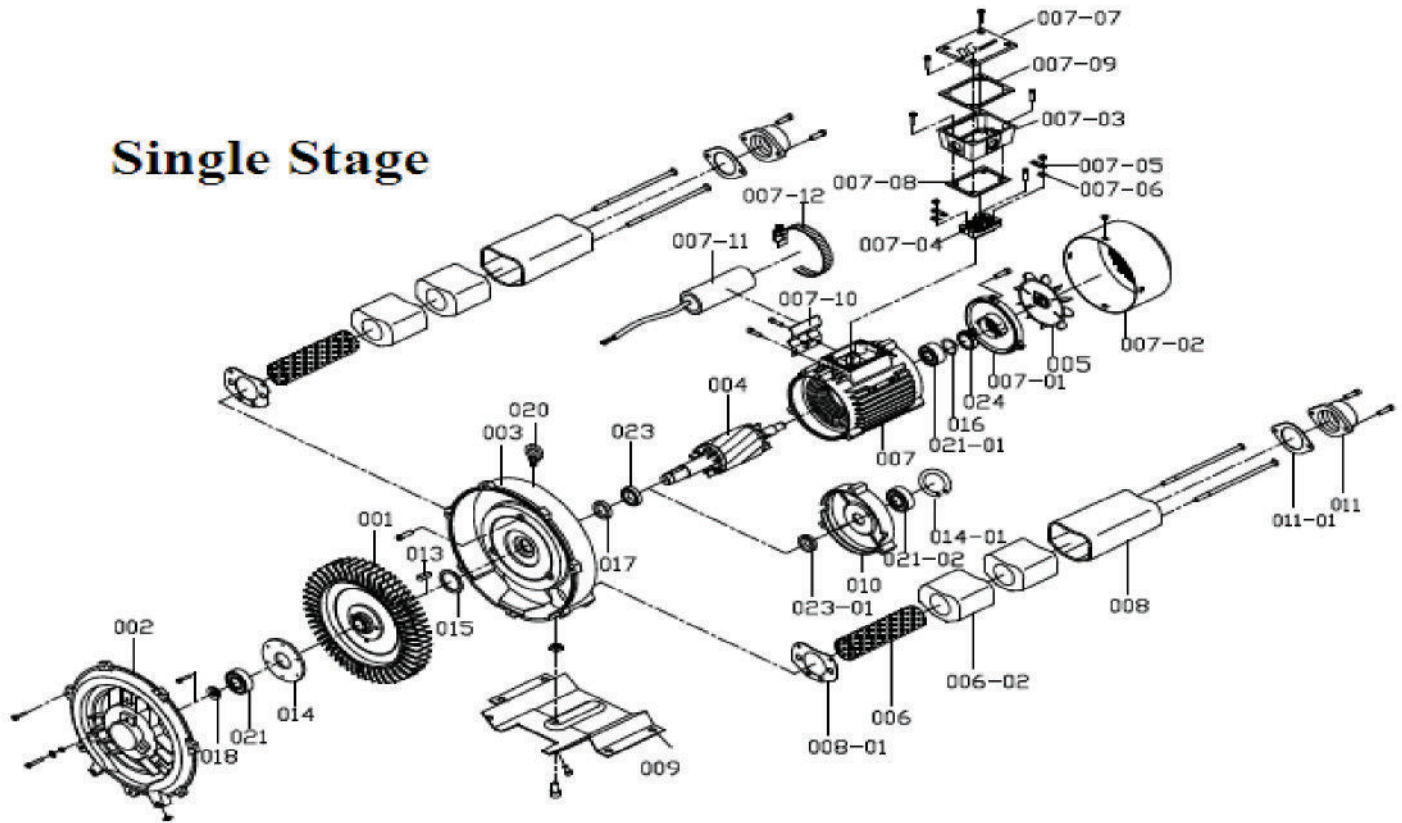
Troubleshooting Chart

Problem	Reason	Remedy
Increased Sound	Noise absorbing foam is damaged Impeller may be rubbing casing inside the blower	Replace foam Replace bearings Send unit to an authorized Atlantic Repair Facility
Excessive Vibration	Damaged impeller Impeller is dirty Improper mounting	Replace impeller Clean impeller Add vibration isolators
Ambient and Exhaust Temperature Increases	Filters are dirty or clogged Back pressure Piping restriction	Replace filter elements Add / check relief valve Piping must be = or > than blower flanges
Decreased Inlet Air Pressure	Inlet air filter is clogged	Clean inlet filter and replace element
Unit is Very Hot	Wrong wiring Phase unbalance Voltage variation Inlet air filter is clogged Blower is dirty Operating pressure or vacuum is too high Operating at no flow Single Phase Operation	Check Wiring Must be within $\pm 5\%$ Supply proper voltage Replace filter element Clean blower Install a relief valve and pressure or vacuum gauge Remove any restrictions Send unit to an authorized Atlantic Repair Facility
Unusual Sound	Impeller is damaged or jammed Bearing failure One phase broken Bearing failure	Clean or replace impeller Send unit to an Authorized Atlantic Repair Facility
Motor Overload	Phase unbalance Voltage variation	Must be within $\pm 5\%$ Supply proper voltage Check wire size and wire connections
Unit Does Not Start	Incorrect electrical connection or power source Impeller is damaged or jammed Bearings damaged / defective	Check wiring diagram, fuse capacity and short circuit Clean or replace impeller Replace bearings



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Single Stage



Double Stage



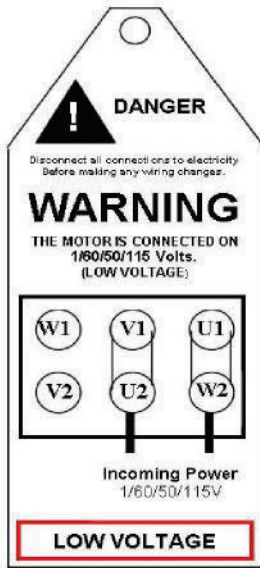
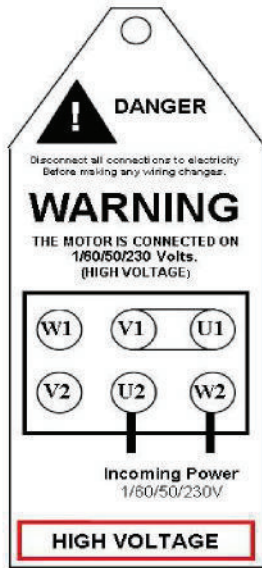
ITEM	PARTS NAME	ITEM	PARTS NAME	ITEM	PARTS NAME	ITEM	PARTS NAME
001	Impeller	007-04	Wire mounting block	013	Rotor pin	Single Stage Only	
002	Blower cover/ back plate	007-05	Wire connection jumper/bridge	014	Bearing washer	007-10	Capacitor mounting bracket
003	Blower housing	007-06	Fixed terminal	015	Washer	007-11	Capacitor
004	Rotor	007-07	Terminal box cover	016	Wear washer	007-12	Steel clamp
005	Fan	007-08	Terminal box gasket	017	Seal	Waterproof Only	
006	Silencer mesh pipe	007-09	Terminal cover gasket	018	Washer	010	Middle motor cover
006-02	Silencer sponge	008	Silencer housing	020	Bronze hoist ring/ lifting ring	014-01	Bearing washer
007	Motor	008-01	Silencer gasket	021	Front bearing	02 1-02	Front bearing
007-01	Motor cover	009	Mounting baseplate	021-01	Rear bearing	023-01	VA-seal
007-02	Fan cover	011	Inlet/outlet flange	023	Front oil seal		
007-03	Terminal box (J-Box)	011-01	Inlet/outlet gasket	024	Rear oil seal		

ITEM	PARTS NAME
Double Stage Only	
025	Muffler mounting bracket
026	Muffler mounting bracket gasket w/ screws
026-0 1	Muffler mounting bracket gasket w/ screws
027	Lateral pipe
027-0 1	Middle motor cover
028	90 degree elbow



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TAG #1 Single Phase Dual Voltage (AB-101, AB-201, AB-301, AB-401) (AB-102/1, AB-202/1, AB302/1, AB402/1)



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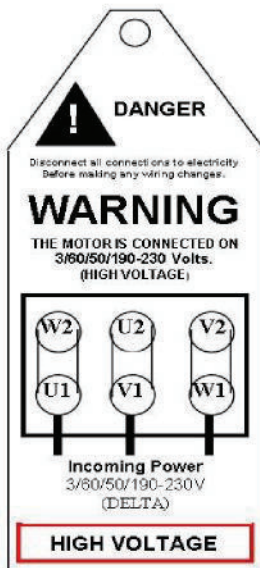
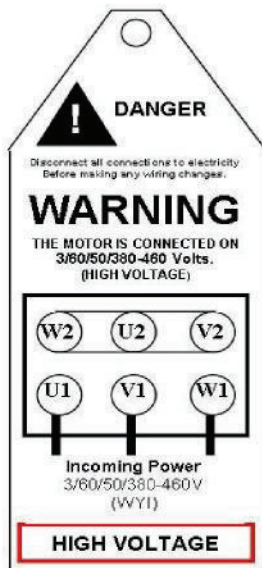
Atlantic Blowers

1225 Capital Dr., Suite 100
Carrollton, TX 75006

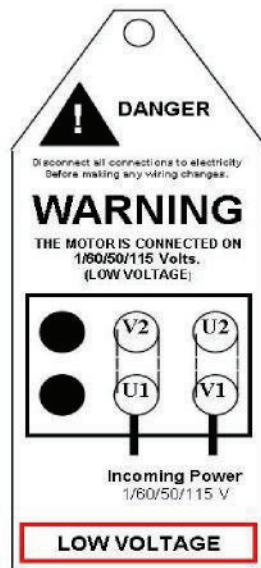
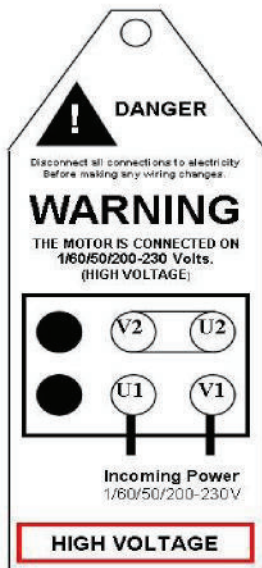
214.233.0280 Office
214.233.0281 FAX

Email: Sales@AtlanticBlowers.com
Website: www.AtlanticBlowers.com

TAG #2 Three Phase Dual Voltage (AB-70 through AB-1300) (AB-102 through AB-1602)



TAG #3 Single Phase Dual Voltage (AB-71, AB-81, AB-91)



Revised: 3/24/09 (Atlantic Blowers New Voltage Tags—2009)



Frequently Asked Questions (FAQ's)

1) **Q - What maintenance does my blower require?**

A- Virtually none, there is no need to grease/oil the bearings as they are sealed and already lubed when you receive your new blower. Bearings are designed to last at a minimum, 20,000 hours.

2) **Q – How do I know what a normal running temperature is for my blower motor?**

A – All of our motors are tested to 285F and should NEVER exceed 300F. Bigger blowers will have a higher running temperature due to the higher pressure and stress on the motor. But the same rules still apply, NEVER exceed 300F.

3) **Q – How do I wire my blower?**

A – There is a wiring diagram located on the underside of the junction box lid. If you are having any issues, contact customer support – (214)233-0280.

4) **Q – Why does my blower keep tripping the breaker?**

A – On start up, the blower can spike as much as 5x the running amps of the blower, make sure this is taken in to consideration; running amps are displayed on your motor tag. Setups vary widely between customers, so if you're still having issues please contact customer support (214)233-0280.

5) **Q – Why is my blower getting so hot?**

A – If you're not already using a relief valve, get one, we very highly recommend this for all applications. If you are using one, loosen the adjustable nut and lower the spring tension in order to allow air to travel through the relief valve. **The cooler you keep the motor, the longer your blower will last.**

6) **Q – Why is my blower making a humming/whining noise?**

A – This is the first indication that your bearings are at the end of their life, shut the blower off IMMEDIATELY and do not run until the bearings have been replaced.

7) **Q – How do I know when to replace the bearings?**

A – If there is no abnormal noise (mentioned above) we recommend that the bearings are replaced after 2 years of continuous use. If the aforementioned happens before the 2 year service mark, follow the answer to question number 6.

8) **Q – My blower will not turn on, why?**

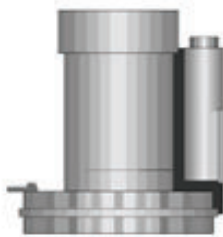
A – Call customer support immediately, the motor may be burnt out. We will give you a few options of what to do next to try and get you back up and running – (214)233-0280.



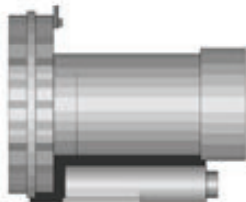
INSTALLATIONS



Incorrect Vertical Position



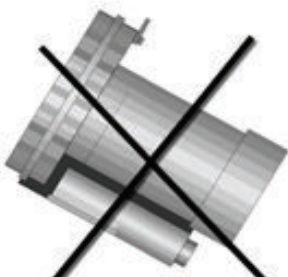
Correct Vertical Position



Correct Horizontal Position



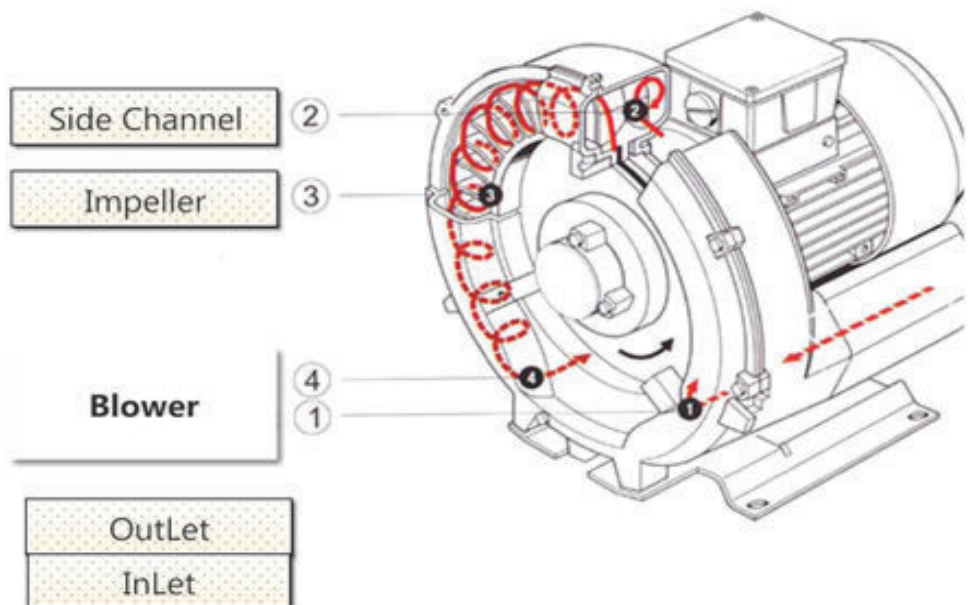
Correct Sloped Position



Incorrect Sloped Position

The impellers in the Atlantic Blowers Regenerative Blowers are mounted directly on the motor shaft for noncontact compression without any friction. Maximum operational reliability, even at high pressure differentials, is ensured by the arrangement of the bearings outside the compression chamber.

The air is taken in through the inlet 1) As it enters the side channel 2) the rotating impeller 3) imparts velocity to the air in the direction of rotation. The centrifugal force of the impeller blades accelerates the air outward and the pressure increases. Every rotation adds kinetic energy, resulting in the further increase of pressure and velocity along the side channel. The pressurized air is then forced to the outlet, discharging it through the muffler 4) where it exits the blower into the atmosphere.



Pressure Conversion Table

PSI	In. H2O	In. Hg	mmH2O	ATM	kPa	mBar
1	27.73	2.036	703.069	0.06804	6.8947	68.947
0.03605	1	0.0735	25.41	0.00245	0.24908	2.489
0.49116	13.595	1	345.315	0.03342	3.3863	33.863
0.00142	0.03937	0.00289	1	0.0000967	0.009806	0.09806
14.696	406.782	29.921	10332.27	1	101.325	1013.25
0.14503	4.014	0.29529	101.971	0.009869	1	10
0.0145	0.40146	0.02952	10.19716	0.0009869	0.1	1

Flow Conversion Table

CFM	M³/hr.	M³/min.
1	1.69901	0.02831
0.58857	1	0.016666
35.3146	60	1

Velocity Conversion Table

Ft/Sec.	Ft/Min.	CM/Sec.	Meter/Sec.	Meter/Min.
1	60	3048	0.3048	18.29
0.01667	1	10.5080	0.0005080	0.3048
0.03281	1.9685	1	0.01	0.600
3.281	196.85	100	1	60
0.0547	3.281	1.667	0.01667	1



Warranty

LIMITED PRODUCT WARRANTY

ATLANTIC BLOWERS (“Atlantic Blowers”) warrants this Product against defects in material or workmanship, as follows: A. Labor	For a period of twelve (12) months from the date of purchase, Atlantic Blowers will, at no charge, repair this Product if determined by Atlantic Blowers to be defective. After the warranty period, the Purchaser must pay all labor charges.
B. Parts	For a period of one (1) year from the date of purchase Atlantic Blowers will, at no charge, supply new or rebuilt replacements for parts determined by Atlantic Blowers to be defective. After the warranty period, the Purchaser must pay all parts charges.
C. Territory	Warranty coverage is worldwide.

During the labor warranty period, to repair the Product, Purchaser will either return the defective Product; freight prepaid, or deliver it to an Atlantic Blowers Service Center or to a service facility authorized by Atlantic Blowers. The Product to be repaired is to be returned in either its original carton or a similar package affording an equal degree of protection. Atlantic Blowers will return the repaired Product freight prepaid to Purchaser. All freight costs associated with replacement of warranty parts after expiration of the original labor warranty period are the responsibility of the Purchaser. Atlantic Blowers is not obligated to provide Purchaser with a substitute unit during the warranty period or at any time. For an additional fee, Atlantic Blowers field service and support at the Purchaser’s location is available to Purchaser at Atlantic Blower’s prevailing per incident billable rates for such service subject to availability.

The limited warranty stated on this card is subject to all of the following terms and conditions.

TERMS AND CONDITIONS

1. NOTIFICATION OF CLAIMS: WARRANTY SERVICE: If Purchaser believes that the Product is defective in material or workmanship, then written notice with an explanation of the claim shall be given promptly by Purchaser to Atlantic Blowers but all claims for warranty service must be made within the warranty period. **If after investigation Atlantic Blowers determines that the reported problem was not covered by the warranty, Purchaser shall pay Atlantic Blowers for the cost of investigating the problem at its then prevailing per incident billable rate.** No repair or replacement of any Product or part thereof shall extend the warranty period as to the entire Product. The specific warranty on the repaired part only shall be in effect for a period of ninety (90) days following the repair or replacement of that part or the remaining period of the Product parts warranty, whichever is greater.

2. EXCLUSIVE REMEDY: ACCEPTANCE: Purchaser’s exclusive remedy and Atlantic Blower’s sole obligation is to supply (or pay for) all labor necessary to repair any Product found to be defective within the warranty period and to supply, at no extra charge, new or rebuilt replacements for defective parts. If repair or replacement fails to remedy the defect, then, and only in such event, shall Atlantic Blowers refund to Purchaser the purchase price for such Product. Purchaser’s failure to make a claim as provided in paragraph 1 above or continued use of the Product shall constitute an unqualified acceptance of such Product and a waiver by Purchaser of all claims thereto.

3. EXCEPTIONS TO LIMITED WARRANTY: Atlantic Blowers shall have no liability or obligation to Purchaser with respect to any Product requiring service during the warranty period which is subjected to any of the following: abuse, improper use: negligence, accident, modification, failure of the end-user to follow the operating procedures outlined in the user’s manual, failure of the end-user to follow the maintenance procedures in the service manual for the Product where a schedule is specified for regular replacement or maintenance or cleaning of certain parts (based on usage) and the end-user has failed to follow such schedule; attempted repair by non-qualified personnel; operation of the Product outside of the published environmental and electrical parameters, or if such Product’s original identification (trademark, serial number) markings have been defaced, altered, or removed. Atlantic Blowers excludes from warranty coverage Products sold AS IS and/or WITH ALL FAULTS and excludes used Products which have not been sold by Atlantic Blowers to the Purchaser. Atlantic Blowers also excludes from warranty coverage consumable items such as filters and valves. All material and accompanying documentation furnished with, or as part of the Product is furnished “**AS IS**” (i.e., without any warranty of any kind), except where expressly provided otherwise in any documentation or license agreement furnished with the Product. Blower(s), coverage will be denied if a filter and relief valve were not used during normal operation. This warranty does not apply to electrical controls and gasoline engines not supplied by Atlantic and does not extend to any goods or parts which have been subjected to misuse, lack of maintenance, neglect, damage by accident or transit damage. Decomposition by chemical reaction and chemical precipitate, or wear caused by the presence of abrasive materials shall not constitute defects.



4. Liability: Atlantic is not responsible or liable for indirect or consequential damages of any kind however, including but not limited to those for use of any products, loss of time, inconvenience, lost profit, labor charges, or other incidental or consequential damages with respect to persons, business, or property, whether as a result of breach of warranty, negligence or otherwise.

5. PROOF OF PURCHASE: The Purchaser's dated invoice must be retained as evidence of the date of purchase and to establish warranty eligibility.

6. PRODUCT REGISTRATION: Registration of any Product or of this limited warranty is voluntary; failure to register will not diminish any rights available under this warranty.

DISCLAIMER OF WARRANTY

EXCEPT FOR THE FOREGOING WARRANTIES, ATLANTIC BLOWERS HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY AND/OR ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND/OR ANY WARRANTY WITH REGARD TO ANY CLAIM OF INFRINGEMENT THAT MAY BE PROVIDED IN SECTION 2-312(3) OF THE UNIFORM COMMERCIAL CODE AND/OR IN ANY OTHER COMPARABLE STATE STATUTE. ATLANTIC BLOWERS HEREBY DISCLAIMS ANY REPRESENTATIONS OR WARRANTY THAT THE PRODUCT IS COMPATIBLE WITH ANY COMBINATION OF NON-ATLANTIC BLOWERS PRODUCTS PURCHASER MAY CHOOSE TO CONNECT TO THE PRODUCT.

LIMITATION OF LIABILITY

THE LIABILITY OF ATLANTIC BLOWERS, IF ANY, AND PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR DAMAGES FOR ANY CLAIM OF ANY KIND WHATSOEVER, REGARDLESS OF THE LEGAL THEORY AND WHETHER ARISING IN TORT OR CONTRACT, SHALL NOT BE GREATER THAN THE ACTUAL PURCHASE PRICE OF THE PRODUCT WITH RESPECT TO WHICH SUCH CLAIM IS MADE. IN NO EVENT SHALL ATLANTIC BLOWERS BE LIABLE TO PURCHASER FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION, REIMBURSEMENT OR DAMAGES ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS OR FOR ANY OTHER REASON WHATSOEVER.

For further information and the name of the nearest authorized Atlantic Blowers service facility contact:

United States of America

Atlantic Blowers

Customer Services

1225 Capital Dr., Suite 100

Carrollton, TX 75006

(214) 233-0280

www.atlanticblowers.com

sales@atlanticblowers.com