



AQUATIC ECO-SYSTEMS®

SWEETWATER® REGENERATIVE BLOWER



OPERATION AND MAINTENANCE GUIDE

IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

CUSTOMER SERVICE / TECHNICAL SUPPORT

If you have questions about ordering Pentair Aquatic Eco-Systems replacement parts and products, please use the following contact information:

Customer Service

Monday to Thursday: 8 AM to 7 PM EST
Friday: 8 AM to 5 PM EST

US

Phone: (877) 347-4788
FAX: (407) 886-6787

International

Phone: (407) 886-3939
FAX: (407) 886-4884

Website:

Visit www.pentairaes.com

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IMPORTANT PUMP WARNING AND SAFETY INSTRUCTIONS



IMPORTANT NOTICE

This guide provides installation and operation instructions for this product. Consult Pentair with any questions regarding this equipment.

Attention Installer: This guide contains important information about the installation, operation and safe use of this product. This information should be given to the owner and/or operator of this equipment after installation or left on or near the pump. This pump is for use for aquaculture installations ONLY. Do not use with any type of swimming pool, hot tub, or spa.

Attention User: This manual contains important information that will help you in operating and maintaining this product. Please retain it for future reference. This pump is for use for aquaculture installations ONLY. Do not use with any type of swimming pool, hot tub, or spa. Warnings and safety instructions for Pentair Aquatic Eco-Systems pumps and other related products are available at:

<http://www.pentairaes.com> or call U.S. (877) 347-4788 • International (407) 886-3939 for additional free copies of these instructions.

READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS



This is the safety alert symbol. When you see this symbol on your system or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

⚠ DANGER

Warns about hazards that can cause death, serious personal injury, or major property damage if ignored.

⚠ WARNING

Warns about hazards that may cause death, serious personal injury, or major property damage if ignored.

⚠ CAUTION

Warns about hazards that may or can cause minor personal injury or property damage if ignored.

NOTE

Indicates special instructions not related to hazards.

Carefully read and follow all safety instructions in this manual and on equipment. Keep safety labels in good condition; replace if missing or damaged.

⚠ WARNING

You will be killed or seriously injured if you don't follow these instructions.

⚠ WARNING

Do not pump flammable or explosive gases, or use in an environment that contains such gases.

⚠ CAUTION

Protect all surrounding items from exhaust air. This exhaust air can become very hot.

⚠ CAUTION

Do NOT flush with kerosene or other combustible solvents.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Disconnect electrical power at the circuit breaker or fuse box before installing this product. Install where it will not come into contact with water or other liquids and where it will be weather protected. Electrically ground this product. Failure to follow these instructions can result in death, fire or electrical shock.



General Warnings

- Code requirements for the electrical connection differ from country to country, state to state, as well as local municipalities. Install equipment in accordance with the current National Electrical Code and all applicable local codes and ordinances.
- Before servicing the compressor; switch OFF power to the compressor by disconnecting the main circuit to the compressor.
- This appliance is not intended for use by persons (including children) of reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.

⚠ WARNING

RISK OF ELECTRICAL SHOCK



This product must be properly grounded. Do not modify the plug provided in any way. If it will not fit the outlet, have the proper outlet installed by a qualified electrician. If repair or replacement of the cord or plug is necessary, do not connect the grounding wire to either flat blade terminal. The green, or green with yellow stripe, wire is the grounding wire.

Do NOT permanently connect this product to wiring that is in bad condition or is inadequate for the requirements of this product.

Guidelines for Product Use

- Pump only clean, dry air. Do not pump flammable or explosive gases or use in an atmosphere that contains such gases.
- Operate at 32-104°F (0-40°C).
- Protect unit from dirt, foreign material and moisture.
- Blower must be installed with properly sized inlet (included) and in-line filters, gauges and relief valves to protect against dirt and overheating.
- Protect all surrounding items and equipment from exhaust air. This exhaust air can become very hot.

OPERATION GUIDELINES



WARNING

Failure to follow these instructions can result in death, fire or electrical shock. Ensure proper installation conditions are met and that installation clearances do not block airflow.



WARNING

Your equipment may be damaged if you don't install your pump according to the following instructions.

Wiring

Make sure the wiring is done by a qualified electrician familiar with NEMA MG2 safety standards, national electrical codes and all local safety codes. Select fuses, motor protective switches or thermal protective switches to provide protection. Fuses act as short circuit protection for the motor, not as protection against overload. Incoming line fuses help to withstand the motor's starting current. Motor starters with thermal magnetic overload or circuit breakers protect the motor from overload or reduced voltage conditions. See the wiring diagram(s) attached to the product for required electrical information.

Check that the power source is correct in order to properly operate a dual-voltage motor. All dual-voltage motors are shipped from the factory wired for 115V unless otherwise requested.

Installation

Sweetwater® Regenerative Blowers may be mounted in any orientation that doesn't block air flow over the motor. Blocking air flow in any way can cause the product to overheat. Each model, unless specified, has an automatic thermal protector that shuts the motor off if it overheats. The motor will restart without warning once the protector resets itself upon cooling.

1. Screw the air filter/muffler assembly into the inlet side of the blower (inlet and outlet are marked). Do not overtighten. If using an inlet check valve, install it first and then the filter assembly into the check valve.

Note: If your blower is equipped with an optional bleed valve assembly, please read instruction #2; otherwise, move to instruction #5.

2. Screw the outlet assembly into the outlet side of the blower. DO NOT overtighten.
3. Screw the valve into the outlet assembly. The valve handle faces away from the blower.
4. Screw in the ceramic air bleed muffler, then adjust the assembly to a vertical position.
5. Screw the flex hose assembly into the blower outlet.
6. The blower may be located on the floor, a bench, a shelf, etc., considering that it must be reached for filter cleanings (and optional bleed valve adjustments). The air temperature in the blower location must not exceed 104°F (40°C). If your air piping system will allow water to siphon into the air lines when the blower is turned off (e.g., power failure), then you should locate the blower or a portion of the main air line above the water level of your highest tank.

Installation (Cont.)

7. A flexible hose and hose clamps are provided on the outlet assembly for connecting the blower to the air piping system. Designed for normal-sized PVC and steel piping, they provide ease of installation and vibration isolation.
8. Optional recommendation for blowers larger than 1 HP: If using a pressure gauge to monitor blower pressure and/or diffuser clogging, then order a gauge kit (**BG00**), drill an 11/32" hole and tap 1/8" NPT into the pipe near the blower (blower side of the bleed valve). Screw in the lever type valve (included). Attach a length of tubing between the valve and the gauge. Since the gauge is a delicate instrument, keep the valve in the off position and turn it on only to take pressure readings; this will greatly prolong the life of the gauge.

Rotation

From the motor side of the blower, check that the blower is rotating clockwise. Proper rotation can also be checked at the inlet and outlet. Incorrectly connecting any two power lines can reverse direction on blowers powered by a 3-phase motor.

Plumbing

Remove any foreign material (burrs, chips, welding drops, slag, pipe cuttings, excess sealant, sand or lime) from plumbing. Check motor mounting and rotation before connecting to plumbing. Inlet and outlet ports are not designed to support plumbing!

Remove plugs from the inlet and outlet ports. Connect with pipe and fittings that are the same size or larger than the product's threaded ports. When installing two blowers in parallel, use plumbing that is two whole pipe sizes larger in diameter than that of the blower. Be sure to connect the intake and exhaust plumbing to the correct inlet and outlet ports.

Operating Temperature

This Sweetwater® Regenerative Blower features totally enclosed fan-cooled (TEFC) motor that releases heat from the surface of the motor. It should feel hot enough to the touch that you generally won't be able to keep your hand on it—this is normal for all TEFC motors. Ensure that the ambient (area around the blower) temperature remains below 104°F (40°C) and that you don't exceed the maximum pressure duty of the blower. If you think you will be operating near the blower's maximum duty, then be sure to install a pressure gauge (see #9 under "Installation").

Strong forced ventilation is often necessary for larger blowers. In vacuum service the hot discharge air of larger blowers must be plumbed away to avoid overheating the area where the blower is located. Use a relief valve to discharge excess air into the atmosphere. If the blower will be operated at 50" H₂O (125 mbar) or higher, then metal pipe is required for hot exhaust air.

GENERAL MAINTENANCE



WARNING Electric rotating machinery and high-voltage electricity can cause serious or fatal injury if improperly installed, operated or maintained.



CAUTION Product surfaces become very hot during operation; allow them to cool before handling.

When servicing, the blower should be de-energized and disconnected from all power sources. All rotating parts should be at a standstill. Caution should always be used when working around your blower, as high-velocity air is entering and exiting the blower and air lines.

No lubrication is necessary as all bearings are sealed. Dirt and dust should be kept off of the unit.

Always keep the air filter clean for the least amount of inlet air restriction. Clean the air filter by "swishing" it in soapy water. Gently rinse, then shake out excess water. Do not scrub or use high-pressure air as this will separate the filter fibers. You may reinstall the filter while it is still wet. We recommend keeping a replacement filter on hand.

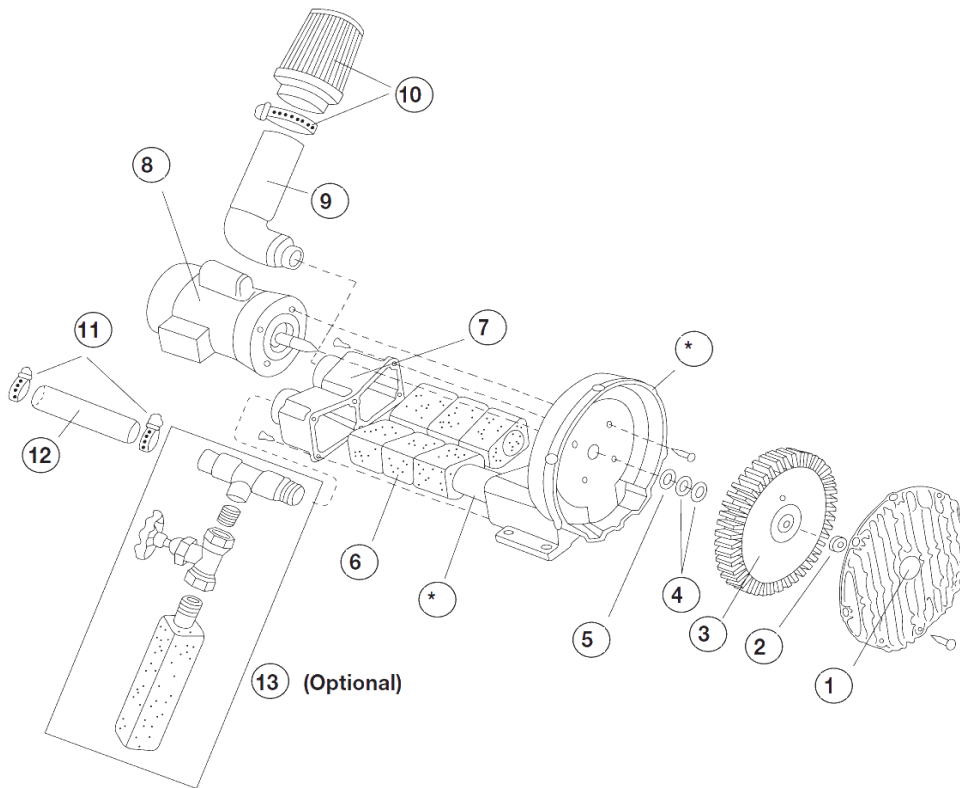
No other routine maintenance is needed. We recommend replacement of the motor bearings after three years of continuous operation to prevent unscheduled blower repair. Your local electric motor repair shop may do this using bearings they should have on hand.

Troubleshooting Chart

PROBLEM	REASON	REMEDY
Increased noise.	Noise absorbing foam is damaged.	Replace foam.
Excessive vibration.	Damaged impeller.	Replace impeller.
	Motor and/or impeller are dirty.	Clean motor and impeller periodically.
Ambient and exhaust temperatures increase.	Motor and/or blower are dirty.	Clean motor and blower periodically.
	Filters are dirty.	Replace filters.
Decreased inlet air pressure.	Inlet air filter is clogged.	Clean or replace inlet filter.
Unit is extremely hot.	Wrong wiring.	Check wiring.
	Low voltage.	Supply proper voltage.
	Inlet air filter is clogged.	Clean inlet filter. Replace cartridge.
	Motor and/or blower are dirty.	Clean motor and blower periodically.
	Operating at too high of a pressure or vacuum.	Install a relief valve and pressure or vacuum gauge.
Unusual sound.	Impeller is damaged or dirty.	Clean or replace impeller.
	Bearing going bad.	Replace bearings.
Motor overload.	Low voltage.	Check power source.
		Check wire size and connections.
Unit does not start.	Incorrect electrical connection or power source.	Check wiring diagram, circuit fusing and circuit capacity.
	Impeller is damaged.	Clean or replace impeller. Install proper filtration.

Should you require service or repair parts, contact Pentair Aquatic Eco-Systems at 877-347-4788 from 8 AM to 7 PM Monday to Thursday and 8 AM to 5 PM Friday. Have your part and serial numbers handy, and our technical staff will gladly help you resolve any problems.

REPLACEMENT PARTS



Ref #	Description
1	Cover
2	Stopnut
3	Impeller
4	Shim Spacer(s)
5	Retaining Ring
6	Foam
7	Muffler Extension
8	Motor
9	External Muffler
10	Inlet Filter + Clamp
11	Clamps
12	Flex Hose
13	Tee, Nipple, Bleed Valve and Silencer (optional)
*	Not Available

LIMITED WARRANTY

Pentair Aquatic Eco-Systems, Inc. (PAES) warrants that its products shall, at the time of delivery and for a period of twelve (12) months thereafter, except for filters, be free from defects in materials and workmanship; and, if any such product shall prove to be defective in material or workmanship under normal intended usage and maintenance during the warranty period, upon examination by PAES or its authorized representative, then PAES shall repair or replace, at its sole option, such defective products at its own expense; provided, however, that the Purchaser shall be required to ship each such defective product, freight prepaid, to PAES' designated facility. The warranty on products and/or components not manufactured by PAES, is limited to the warranty, if any, provided by the original manufacturer of said product or component. PAES sole warranty in regard to any components or products that are not manufactured by it shall be limited to the repair or replacement of the product, as set forth herein, with the condition that the Purchaser first return such defective item, freight prepaid, to PAES' designated facility. After PAES has made an inspection of the product, and has confirmed that there is a defect in the manufacture of the product, a credit will be issued to Purchaser's account.

PAES HAS MADE NO AFFIRMATION OF FACT AND HAS MADE NO PROMISE RELATING TO THE GOODS BEING SOLD THAT HAS CREATED OR AMOUNTED TO AN EXPRESS WARRANTY OR THAT THE GOODS CONFORM TO ANY AFFIRMATION OR PROMISE. PAES DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS. PAES SHALL NOT BE RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES RESULTING FROM ANY PRODUCT DEFECT. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

This warranty does not extend to an equipment that has been subjected to:

1. Damage caused by careless handling, improper repackaging, or shipping.
2. Damage due to misapplication, misuse, abuse or failure to properly operate equipment.
3. Damage caused by improper installation or storage.
4. Damage due to unauthorized product modifications or repairs.
5. Damage caused by negligence, or failure to properly maintain products.
6. Accidental damage, fire, acts of God, or other circumstances outside the control of PAES.



2395 APOPKA BLVD., APOPKA, FL 32703 • US (877) 347-4788 • INT. (407) 886-3939

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