

WHITEWATER[®]

Regenerative Blower Operating and Maintenance Instructions (Part Nos. WW10–WW80)



WW10

Part No. _____ Serial Number _____ Date Purchased _____



AQUATIC ECO-SYSTEMS™

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Safety Messages

Safety is important to us. We have included safety messages throughout this manual and for your protection. Please read and follow all directions.

A safety message has a safety alert symbol followed by an explanation of what the hazard is, what can happen and what you should do to avoid injury. This is the safety alert symbol:



The safety alert symbol and "WARNING" or "CAUTION" will precede all safety messages:



WARNING

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



CAUTION

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



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.

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 and moisture.
- Blower must be installed with the properly sized inlet (included) and in-line filters, gauges and relief valves to protect against dirt and overheating.
- Protect all surrounding items from exhaust air. This exhaust air can become very hot.

Wiring

Make sure the wiring is done by a qualified electrician familiar with NEMA MG2 safety standards, national electric code 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

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 #3.

2. a. Screw the outlet assembly into the outlet side of the blower. Do not overtighten.
b. Screw the gray-colored valve into the outlet assembly. The valve handle faces away from the blower.
c. Screw in the ceramic air bleed muffler, then adjust the assembly to a vertical position.
3. Screw the flex hose assembly into the blower outlet.
4. 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.
5. 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.
6. Soft material may be placed under the blower in order to isolate any noise. A carpet remnant or a piece of soft foam is suitable. Bolting the blower down is usually not necessary; however, you may want to use a bolt, nail or stud through one or more mounting holes to eliminate the possibility of the blower falling off of a shelf.

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 blower a 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 #7 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. There is no need to return the blower to PAES for repair, but you can and we will gladly fix it for a reasonable price.

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.
Unusual sound.	Operating at too high of a pressure or vacuum.	Install a relief valve and pressure or vacuum gauge.
	Impeller is damaged or dirty.	Clean or replace impeller.
Motor overload.	Bearing going bad.	Replace bearings.
	Low voltage.	Check power source.
Unit does not start.	Check wire size and connections.	Check wiring diagram, circuit fusing and circuit capacity.
	Incorrect electrical connection or power source.	Clean or replace impeller. Install proper filtration.
	Impeller is damaged.	

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.

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 any Equipment that have 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.



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