

# Rocking Piston Aeration Systems



## Diffused Aeration Systems

**Installation • Operation  
Maintenance Guidelines**

*Save this booklet for future reference!*

## Thank you for your purchase!

This aeration system will be a great benefit to the aquatic ecosystem in which you are placing it. Please read through the following guidelines completely before installation and operation of your aeration system.

### Safety Warnings

- Use extreme caution when operating in winter. Danger due to thin ice can cause drowning. Unseen currents can cause thin ice in areas long distances away from diffuser operation. Provide adequate warning for others using a pond with a diffused aeration system.
- The surface of the compressor will be hot during operation. This is normal — be careful not to touch the compressor while it is running.
- **Units must be connected to GFCI protected outlets.**
- Avoid using extension cords to operate compressor.
- Keep children or pets away from operating units
- Always disconnect power when servicing system.
- Relieve pressure from system before servicing.

### Operation

- All of our compressors are designed for continuous operation. It is not uncommon for these compressors to run 24 hours per day for three to five years. The only maintenance required is replacement of wearable items (diaphragm, piston ring, vanes, etc.) when needed and keeping filter clean.



**CAUTION:** All compressors in these kits are designed for oil-free operation. Never oil or lubricate the compressors.

- In addition to adding oxygen to your pond, an aeration system creates a circulation action. It takes hours for the maximum effect to be achieved, therefore we recommend running these systems continuously so that maximum circulation is sustained.

### Summer Time Start Up



**CAUTION:** If you are installing this system at a time when your pond is already stratified (warm on surface, cold on bottom), you should be careful when first starting the aeration system. If the stagnant water on the pond bottom is stirred up too fast, a temporary increase in oxygen demand will occur and, in rare cases, a fish kill could result. If your pond is severely stratified, you should only run your system one to two hours the first day. Each day after that, increase the run time by one to two hours during the first week, run continuously after that. This will slowly mix the bottom water without a sudden depletion of oxygen.

## Installation Precautions

- The air diffuser should **not** be placed in the deepest part of the pond. Try to locate the diffuser at approximately  $\frac{2}{3}$  to  $\frac{3}{4}$  of the deepest point (a 15' deep pond would have the diffuser at approximately 10' to 12' deep). This allows the deepest water to remain cool in the summer and stay warm in the winter.
- If you purchased your aeration system without weighted tubing, you will need to supply small weights such as chimney bricks, pipe or rod. Strap the weights securely around the tubing to bring it to the bottom.
- If your pond freezes during the winter, be sure the tubing is buried leading into the pond. If not, the ice can form around the tubing, kinking it or possibly shearing it off.

**CAUTION:** *Locate all utilities before digging to ensure safety of installer and others.*

## Aeration System Details

| Base Kit Part # | Maximum* Pond Size | Maximum Depth | Diffuser Assembly | Cabinet Compatibility |
|-----------------|--------------------|---------------|-------------------|-----------------------|
| PA34            | 1 acre             | 40'           | (1) EPMD1         | SC18, SC22, SC25      |
| PA34-2          | 1½ acres           | 40'           | (2) EPMD1         | SC18, SC22, SC25      |
| PA66            | 3 acres            | 40'           | (3) EPMD2         | SC18, SC22, SC25      |
| PA86            | 4 acres            | 40'           | (4) EPMD2         | SC22                  |
| PA90            | 4 acres            | 40'           | (2) EPMD4         | SC22                  |

\*Factors such as pond depth and pond shape will affect maximum pond size

**Note:** Kits are available with multiple tubing options (non-weighted, quick sink, mix and match). Part # column reflects generic kit type.

## Compressor Specifications

| Base Kit Part # | Compressor* | Horsepower | Maximum Cfm | Operation Cost per 24 Hours** |
|-----------------|-------------|------------|-------------|-------------------------------|
| PA34            | ERP25       | 1/4 hp     | 2.5         | 37¢                           |
| PA66            | ERP50       | 1/2 hp     | 5.2         | \$1.00                        |
| PA86            | ERP75       | 3/4 hp     | 7.5         | \$1.38                        |
| PA90            | ERP75       | 3/4 hp     | 7.5         | \$1.38                        |

\*Compressors all carry a two year warranty from date of purchase. See compressor instructions for warranty details.

\*\*Cost calculated at 9¢ per kwh, continuous operation at 10' depth. Actual operational cost will depend on unique application.

## Compressor Placement

It is critical that the air compressors be protected from the weather. You will need to provide a shelter for your compressor to protect it from rain, snow and other harsh elements.

- Be sure your shelter is adequately ventilated.
- Be sure the compressor does not sit directly on the ground, as the vibration from the motor will cause dust and dirt particles to be pulled into the motor and may cause premature failure.
- If operating compressor in freezing climates do not place compressor in “heated” buildings. Warm air holds more moisture. This warm air may condense and freeze in the colder outdoor line.
- Ensure that compressors are placed where they will not become flooded with water.
- If possible, shaded areas are preferred.
- In areas with limited electrical supply, compressors can be placed long distances from the pond edge. A remote access valve assembly can be fed from the compressor with properly sized tubing.



## Cabinet Placement

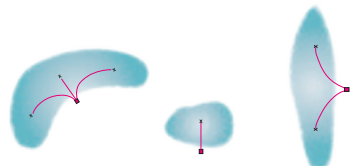
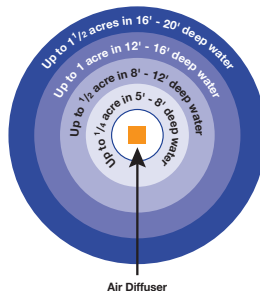
- If installing a Sentinel Deluxe Aeration System, place the cabinet on a level, unobstructed base to ensure the compressor does not overheat.
- A post mounted cabinet should be kept free from high weeds and other obstructions.

## Diffuser Placement

The amount of surface area an aeration system will effectively cover is greatly dependent on two factors - DEPTH and SHAPE. The deeper an air diffuser is located, the more boiling action it will create and a larger area will be aerated. The diagram below shows how much surface area is effectively aerated per air diffuser at various depths. Ponds that are irregular or odd shaped will also reduce size of aeration area — call our technical department for additional help.

Example:

Our PA34 pond aerator would aerate only  $\frac{1}{8}$  of an acre if operated in 4' deep water, while aerating up to 1 acre if operating in 12' - 16' deep water.

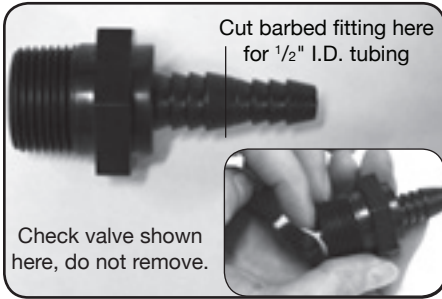


The shape of a pond affects the amount of diffusers needed. Irregular shaped ponds often require multiple diffusers to adequately aerate entire water column.

## General Assembly Instructions

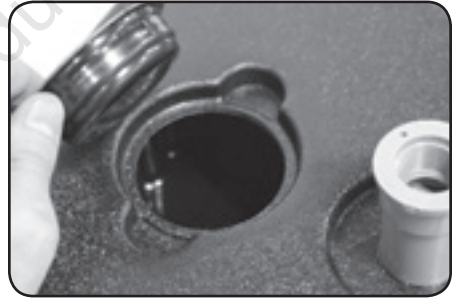
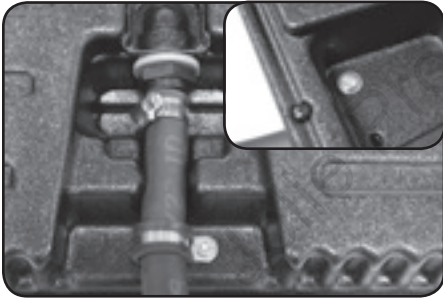
1. Unpack the aeration system to ensure all parts were received. If a shortage occurs, please notify EasyPro immediately.
2. Assemble diffusers, detailed instructions included with each diffuser assembly.  
**NOTE:** Video walkthrough of diffuser assembly and installation found at: [easypropondproducts.com/diffuser-assembly](http://easypropondproducts.com/diffuser-assembly)

### Diffuser Assembly



1. Barbed check valve is designed to be used with 1/2" and 3/8" tubing. Remove end of barb if installing 1/2" tubing.

2. Slip hose clamp over barbed check valve and push tubing tightly onto the fitting.



3. Use washer on both sides of base. Insert bolt and tighten nut to clamp down tubing and provide strain relief.

4. Remove plug on the top of the base and fill about half full (3 to 5 lbs.) with sand, rock or gravel.

### General Assembly Continued

3. Unroll the entire roll of tubing. It is recommended that the pond diffuser be installed at this point. This will allow you to trim any unused tubing before attaching to the compressor outlet assembly.
4. Connect the valved outlet assembly to the compressor. Once tubing is in place and trimmed, attach the other end of the tubing to the flexible hose on the compressor.
5. Open the valves on the outlet assembly to their full open position. Plug the compressor into a GFCI outlet and adjust each valve to equal the air flow to each diffuser. This corrects the difference in air flow caused by a difference in operating depth and/or tubing lengths.

## Maintenance Guidelines

- Keep your compressor clean. Any excess dust and debris on motor or air intake may significantly shorten the life of the compressor.
- Diffusers may need regular cleaning in certain water conditions. This may be every two to five years.
- Compressors may need to be rebuilt if running but no longer “pumping air.” Contact your EasyPro dealer for compressor rebuild kits.
- If lines become frozen, a small amount of denatured alcohol can be run down the frozen line to thaw it out. The small amount of alcohol will not harm fish or biological processes in your pond.

After one or two years of operation, you will possibly notice a sudden drop in air bubbles. This is a sign the compressor needs new piston cup or vanes. Rebuild kits are available to restore like-new performance. Be sure to keep the air filter clean. Filters can be washed in soapy water. Replacement filters are available.

| Kit Part # | Compressor* | Replacement Filter/Element | Compressor Repair Kits |
|------------|-------------|----------------------------|------------------------|
| PA34       | ERP25       | ERPF1/ERPF12E              | ERP25K                 |
| PA66       | ERP50       | ERPF1/ERPF12E              | ERP50K                 |
| PA86       | ERP75       | ERPF2/ERPF12E              | ERP75K                 |
| PA90       | ERP75       | ERPF2/ERPF12E              | ERP75K                 |

\*Compressors all carry a two year warranty from date of purchase. See compressor instructions for warranty details.

## Troubleshooting

### Compressor Troubleshooting

| Low Pressure              | High Pressure | Compressor Overheating | Excess Noise | Cause and Solution                              |
|---------------------------|---------------|------------------------|--------------|---|
| •                         |               | •                      |              | Dirty air filter, clean or replace              |
| •                         |               |                        |              | Valves closed too much, open valves             |
| •                         |               |                        | •            | Worn piston cup, rebuild compressor             |
|                           | •             |                        |              | Plugged/frozen tubing, inspect and repair       |
| •                         |               |                        | •            | Leaky tubing or check valve, inspect and repair |
| Compressor will not start |               | •                      |              | Wrong voltage, check power source               |
| Compressor will not start |               | •                      |              | Miswired electrical components, check wiring    |

### Diffuser Troubleshooting

| Low Air Flow | High Air Flow | Uneven Air Flow | Burping Bubbles | Cause and Solution                           |
|--------------|---------------|-----------------|-----------------|--|
| •            |               | •               |                 | Leak in system, check connections and repair |
| •            | •             | •               |                 | Manifold not set correctly, adjust placement |
|              |               |                 | •               | Damaged or torn membrane, replace            |
| •            |               |                 |                 | Compressor issue, see above                  |

## Limited Warranty

This limited warranty is against any mechanical or material defects for a period of (see below) from the date of purchase. Warranty only covers properly installed and maintained units.

Compressors carry a two year warranty - covered by manufacturer's warranty (consult owners manual for full details).

Air diffusers have a five year warranty.

Weighted tubing has a five year warranty.

The limited warranty does not cover normal wear and tear, nor any deterioration suffered through overloading, improper use, negligence or accident. Similarly, any modification made by the purchaser to the product will cause the warranty to be null and void.

All returned items will be inspected to determine cause of failure before warranty is approved.

Warranty does not cover any cost associated with the installation or removal of the product subject to warranty claim.

An RA number must be obtained by calling EasyPro Pond Products at 800-448-3873. It is your responsibility to pay the return shipping charges. Be sure to include the RA number, original receipt (in the form of an invoice or sales receipt), name, return address and phone number inside of the package. No warranty claims will be honored without the original receipt.

Ensure the product is properly packaged and insured for the replacement value. Damage due to improper packaging is the responsibility of the sender.

The manufacturer or supplier shall not be held liable for any damages caused by defective components or materials of this product; or for loss incurred because of the interruption of service; or any consequential/incidental damages and expenses arising from the production, sale, use or misuse of this product.

The manufacturer or supplier shall not be held liable for any loss of fish, plants or any other livestock as a result of any failure or defect of this product.

## Boost the Benefits of Aeration

EasyPro's beneficial bacteria treatments are proven to work in conjunction with aeration systems to improve the natural biological balance and overall water quality. The bacteria work along the pond bottom, breaking down organic matter such as leaves, grass clippings, dead algae and fish waste.



*EasyPro bacteria treatments are Made in the USA. "Safe for fish, pets, wildlife and family!"*

### EasyPro Pond-Vive

The natural, biological way to revive your pond

This special blend of beneficial bacteria is designed to:

- Reduce oxygen demand and sludge buildup
- Eliminate excess nutrients and pond odors
- Improve water clarity

Available in 10 lb. and 25 lb. pails with 8 oz. water soluble packs or as loose powder in bulk 100 lb. drums.



### EasyPro Sludge Remover Pellets

Bacteria specifically designed to reduce sludge on the pond bottom

- Great for spot treating around docks and beach areas
- Available in 10 lb. and 25 lb. pails, one ounce of pellets covers approximately 200-250 square feet of shoreline or beach area



### EasyPro Lake Colorant

Add EasyPro Lake Colorant to give your pond a beautiful look

- Available in blue or black one quart containers
- Nontoxic and compatible with most aquatic herbicides, water can be used for swimming and irrigation once dispersed
- Concentrated formula, one quart treats one acre of water 3' - 6' deep



**Please keep a copy for your records**

**Base Kit Part # \_\_\_\_\_**

**Compressor Serial # \_\_\_\_\_**

